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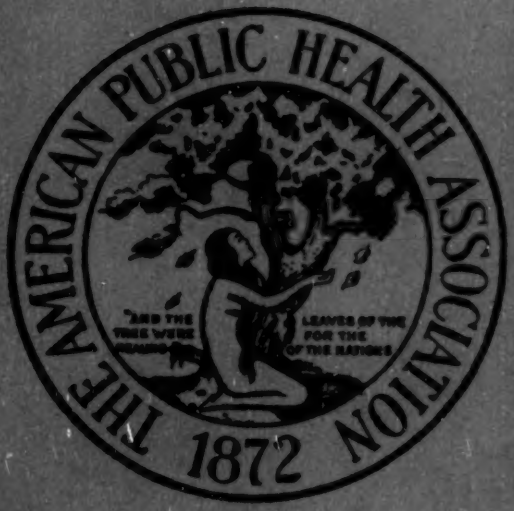

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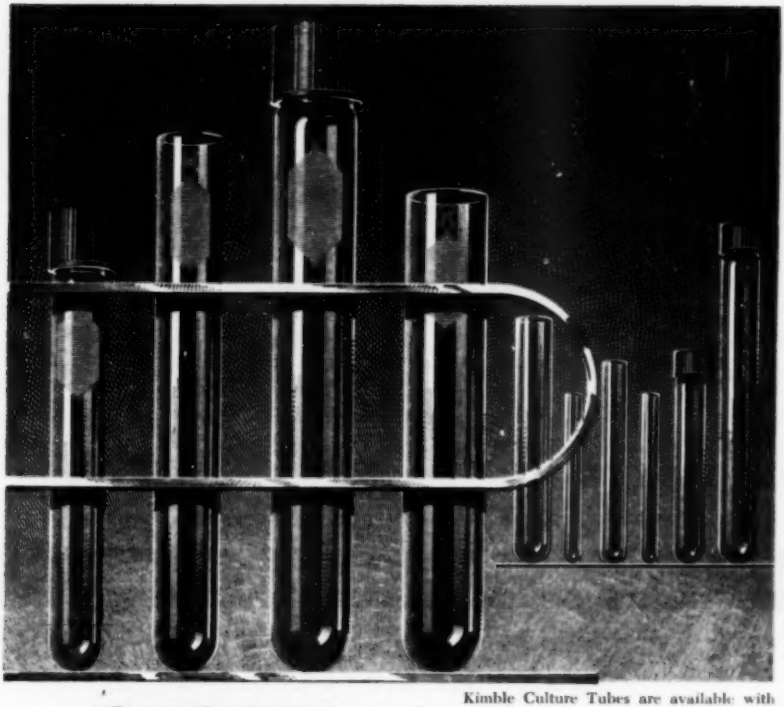

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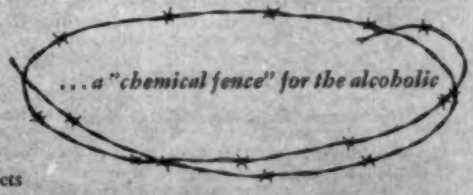

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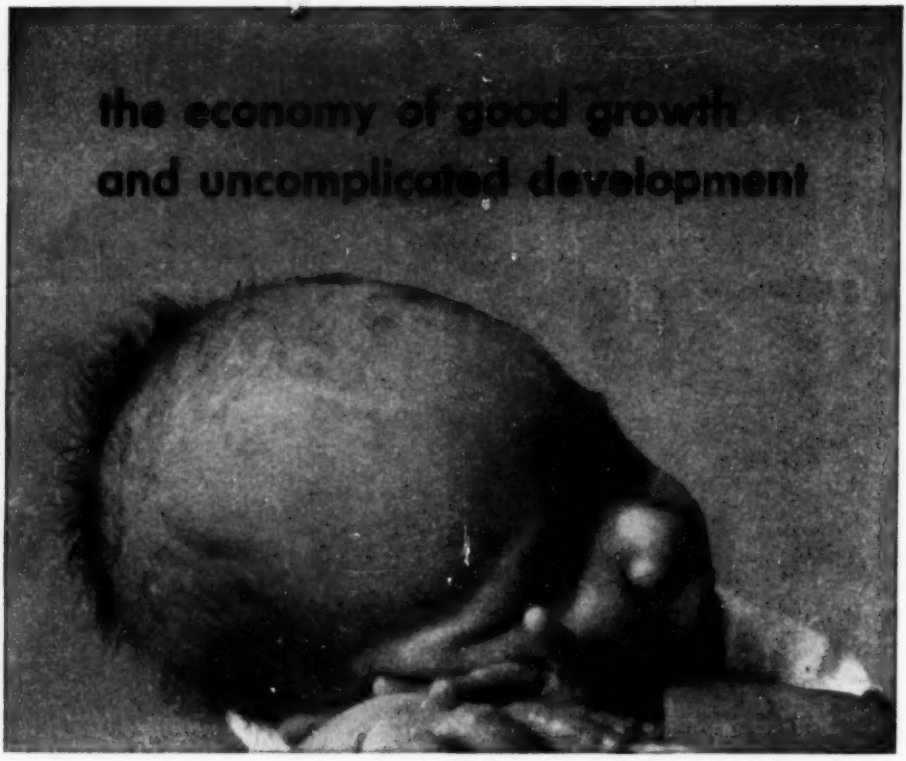

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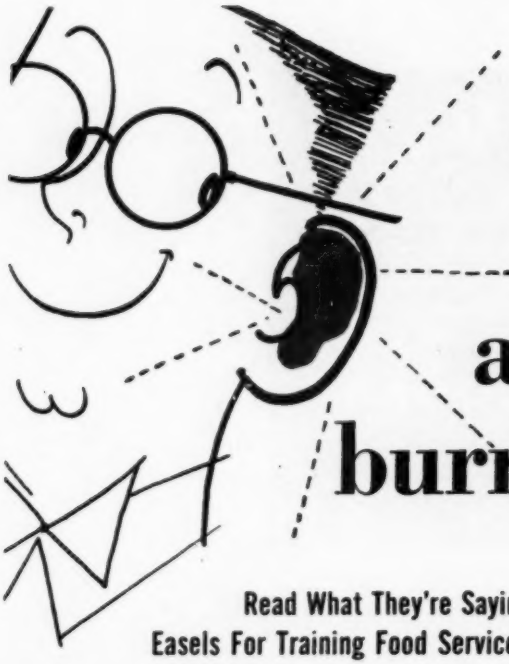

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1. Kroop, I. G. and Shackman, N. H.: Proc. Soc. Exper. Biol. & Med. 86:95 (May) 1954.
2. Wood, H. F., and McCarty, M.: J. Clin. Investigation 30:616 (June) 1951.
3. Stollerman, G. H., et al.: Am. J. Med. 15:645 (Nov.) 1953.
4. Hedlund, P.: Acta med. Scandinav., Supplement 196:579, 1947.

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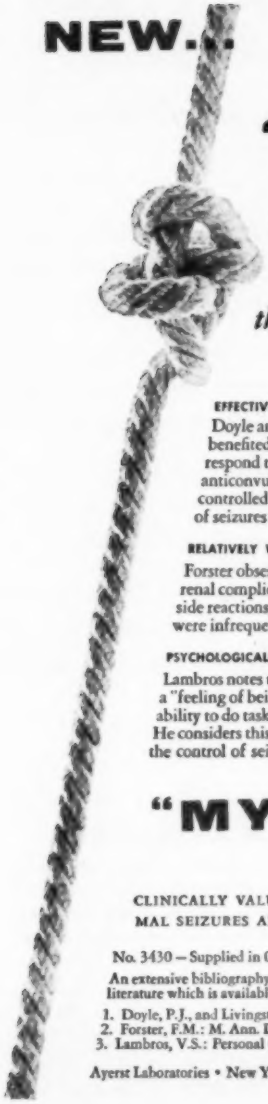

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1. Doyle, P.J., and Livingston, S.: J. Pediat. 43:413 (Oct.) 1953.
2. Forster, F.M.: M. Ann. District of Columbia 23:137 (Mar.) 1954.
3. Lambros, V.S.: Personal Communication.

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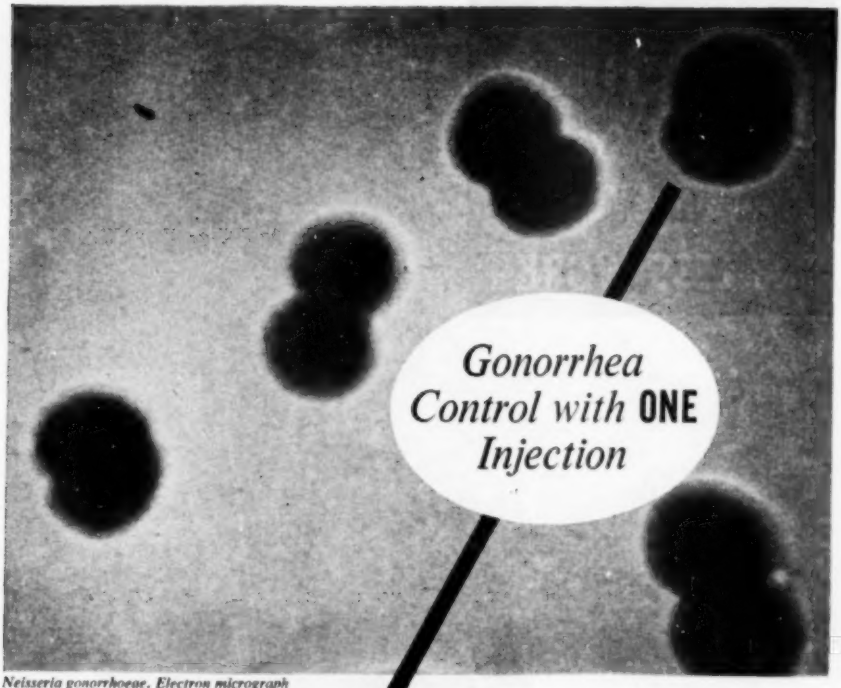

Neisseria gonorrhoeae. Electron micrograph

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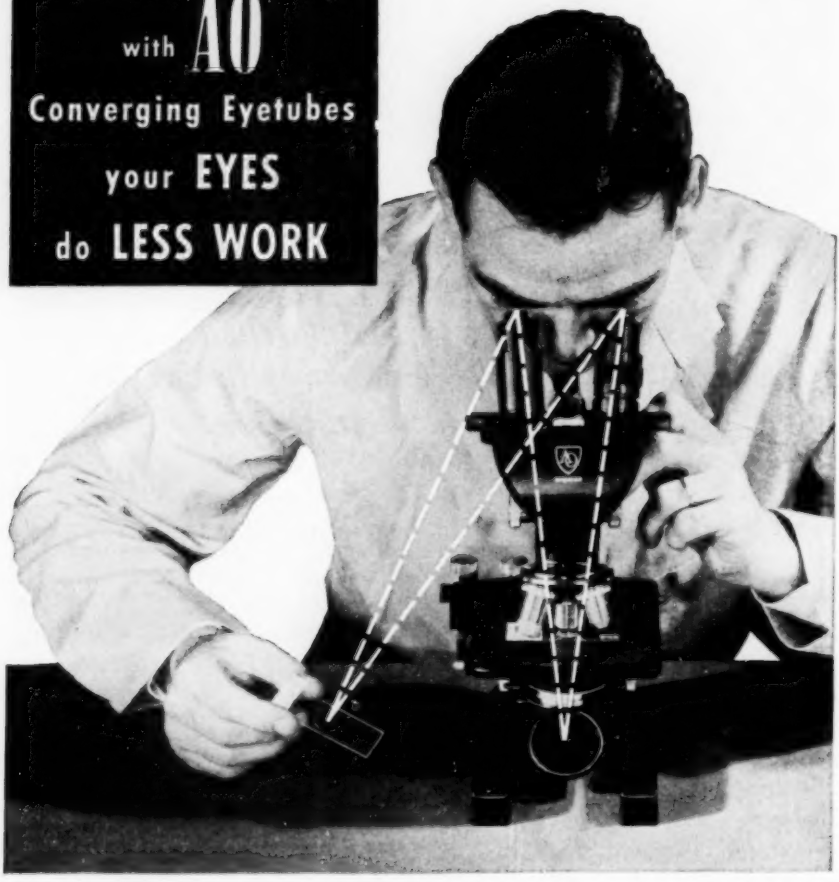

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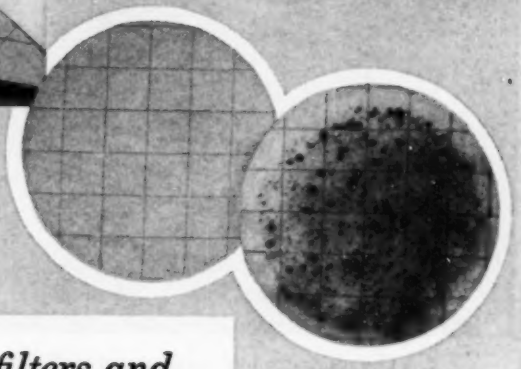

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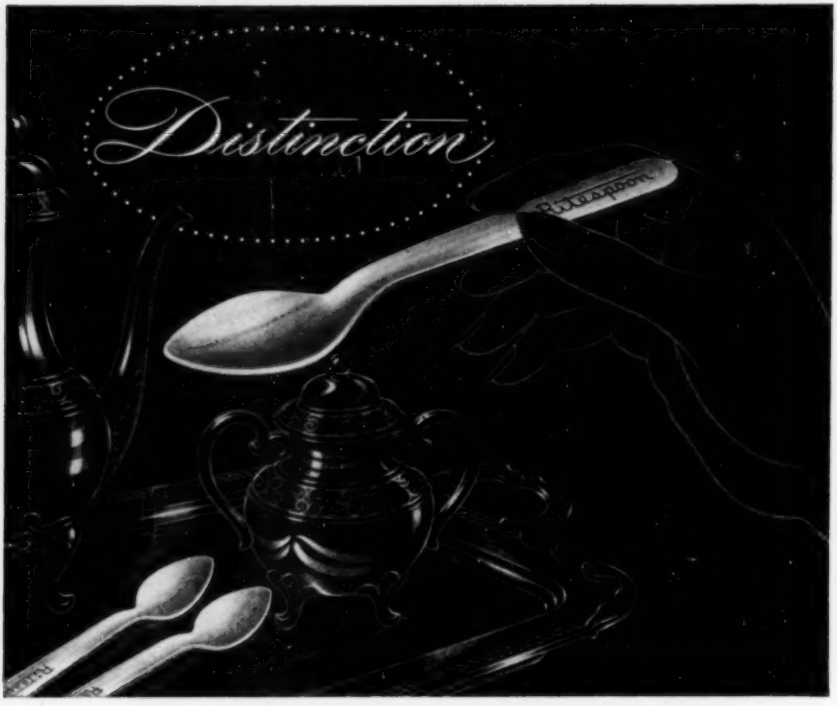

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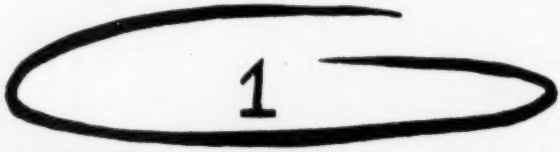

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NEW IOWA BREAKFAST STUDY REPORT

In recent studies at a distinguished medical school of a leading mid-west university, it has been shown (1), (2), (3) that the omission of the morning meal may result in the lowering of the mental and physical efficiency of young women, young men, and old men during the late morning hours. It was deemed important to determine if the same things hold true for boys 12-14 years of age. In order to determine this, physiologic responses of 25 healthy boys 12-14 years of age were critically observed for a period of 28 weeks (4).

The physiologic responses used to show any effects which the omission of breakfast might have on 12-14 year old boys were as follows: neuromuscular tremor magnitude, choice reaction time, maximum grip strength, grip strength endurance, maximum work rate, and maximum work output.

The attitudes and scholastic attainments of the boys were deducted from teachers' observations and records.

BASIC BREAKFAST. In order to show the effect of the omission of breakfast on the responses of the boys each general diet plan was broken down into two periods as follows:

BASIC BREAKFAST PERIOD. During this time a breakfast was served which consisted of fruit, cereal, milk, bread and butter, which provided approximately one-fourth of the total caloric and protein requirement for each subject.

OMISSION OF BREAKFAST. During the period that the morning meal was omitted no food was allowed after 8:00 P.M. until lunch the following day.

FROM THESE EXPERIMENTS SEVERAL PRACTICAL AND SOUND CONCLUSIONS CAN BE DRAWN:

- **Neuromuscular tremor magnitude, choice reaction time, grip strength and grip strength endurance were unaffected by the omission of breakfast.**
- **Maximum work rate and maximum work output were significantly less in the late morning hours during the period when breakfast was omitted.**
- **It was the consensus of the school authorities that the omission of breakfast exerted a significant detrimental effect both on the attitude and scholastic attainment of the boys who followed this practice during the time they were in school.**
- **The subjects showed no significant change in body weight whether they ate no breakfast or a basic cereal breakfast, so long as their total caloric intake per day was not changed.**
- **The conclusions drawn from the study of boys 12-14 years of age not only confirmed many of the findings which applied to young women and young and old men, but demonstrated that, for the most part, the good breakfast habit is a sound nutritional principle that applies to teen-agers and the young and old alike.**

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(1) Tuttle, W. W., Wilson, Marjorie, and Daum, Kate: Effect of Altered Breakfast Habits on Physiologic Response. J. Applied Physiol. 1:545, 1949.

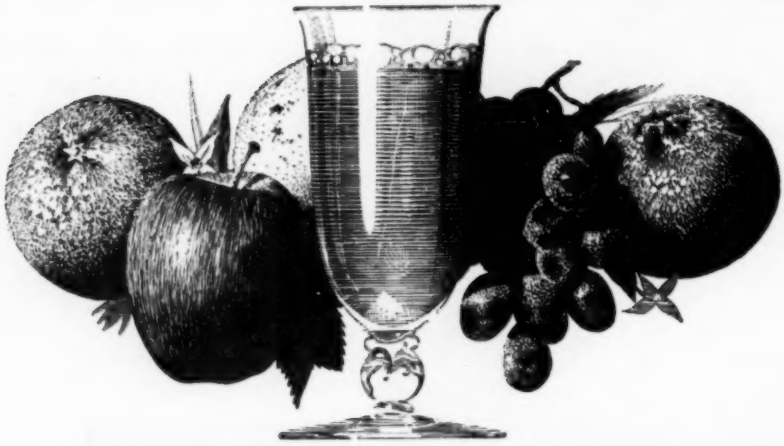
(2) Tuttle, W. W., Daum, Kate, Myers, Loraine, and Martin, Constance: Effect of Omitting Breakfast on the Physiologic Response of Men. J. Am. Dietet. A. 26:132, 1950.

(3) Tuttle, W. W., Daum, Kate, Imig, C. J., Randall, Barbara, and Schumacher, Mary T.: Effect of Omitting Breakfast on the Physiologic Response of the Aged. J. Am. Dietet. A. 28:117, 1952.

(4) Tuttle, W. W., Daum, Kate, Larsen, Rosemary, Salzano, John, and Roloff, Louise: The Effect of the Omission of Breakfast on the Physiologic Responses, Attitude, and Scholastic Attainment of Boys 12-14 Years of Age. J. Am. Dietet. A. 30:7, 1954.

This report is presented during the fourth annual September Better Breakfast Month by the Cereal Institute as a public service to aid in improving the nutritional health in your community.

Juices need this advantage



Did you know that ascorbic acid may be added to certain fruit and vegetable juices to standardize their vitamin C content, thus overcoming wide variations which can occur *(see table below)*. Many nutritionists believe that the public interest is best served when the ascorbic acid content of processed juices is so standardized. A label statement of 100% of the minimum daily adult requirement may be made when a juice serving contains 30 mg. of ascorbic acid.

When a food processor improves his juice by raising or standardizing its vitamin C content he merits your support. If you wish information about good juices which are now made better through the use of Roche ascorbic acid, please write to the Vitamin Division.

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Below are examples of minimum and maximum levels of ascorbic acid in commercially canned juices. Note the wide variations! All figures are in milligrams per 100 grams of juice. Data from U. S. Department of Agriculture.

	Min.	Max.
Grapefruit juice	10.0	49.0
Orange juice	9.7	70.0
Pineapple juice	5.4	18.0
Apple juice	0.2	3.6
Grape juice	0.0	4.7
Tomato juice	2.5	32.0

It is in the public interest to standardize the vitamin C content of these processed juices and juice products.

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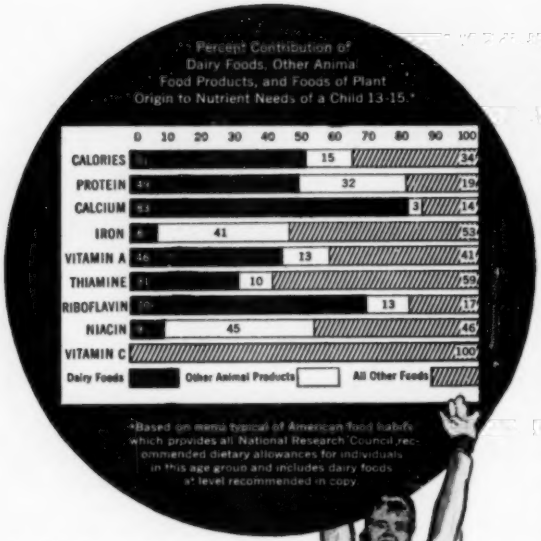
Percent Contribution of Dairy Foods, Other Animal Food Products, and Foods of Plant Origin to Nutrient Needs of a Child 13-15.*
0 10 20 30 40 50 60 70 80 90 100
CALORIES 15 34
PROTEIN 32 19
CALCIUM 3 14
IRON 41 33
VITAMIN A 13 41
THIAMINE 10 59
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*Based on menus typical of American food habits which provides all National Research Council recommended dietary allowances for individuals in this age group and includes dairy foods at level recommended in copy.

The presence of this seal indicates that all nutrition statements in the advertisement have been found acceptable by the Council on Foods and Nutrition of the American Medical Association.

Just giving the hungry teen-ager *enough* food to satisfy his or her appetite won't necessarily satisfy nutritional needs as well—the diet must supply all the nutrients required for this period of rapid development.

Greater independence in choice of foods begins at this age. Emotional changes occur. Physical growth is rapid, and activity is intensified. Faulty food fads and poor eating habits should be guarded against.

Physical growth of the adolescent means rapid growth of the long bones with greatly increased storage of *calcium* and other minerals.[1] The amount of protein deposited in muscle and other soft tissues is also increased.

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[1]Stearns, G. The human requirement of calcium, phosphorus, and magnesium. J. Am. Med. Assn. *142*:478 (Feb.) 1950.

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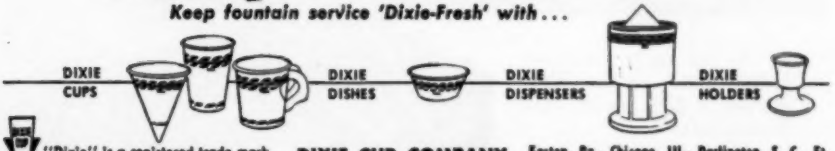

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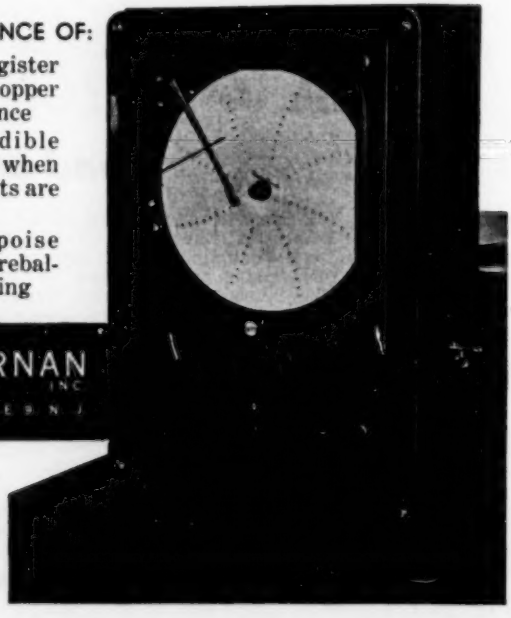

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Advice and Reassurance

DAVID M. LEVY, M.D.

The examples upon which this discussion is based come from a big city child health station, but the principles they illustrate so clearly will apply to many an interpersonal relationship in any community and outside the maternal and child health field as well.

Advice and reassurance are procedures so natural, so taken for granted in the physician's daily discourse with his patients that it may appear surprising to find these words on a program of medical topics. The physician is well aware that advice may not be understood or accepted, and that reassurance may not dispel worry. On such occasions he alters his usual methods. He becomes more specific or emphatic, more cajoling or commanding, depending on what he senses in a particular situation. He may wonder why some patients take his advice and reassurance so well, others so poorly. Very likely he will form definite opinions on the subject, but it is quite unlikely that he will regard the problem as something that can be studied in an organized way, in the way problems of clinical medicine are studied.

In a municipal health station, advice and reassurance are a more compelling problem than in private practice, because of the larger number and diversity of patients and because of the pressure of time. Nevertheless, the problems presented are as pertinent to the private practitioner as they are to the public health physician and, very likely, to the practice of other medical specialties besides pediatrics.

On the giving of advice, much may be said about its intellectual aspect, about its comprehension by the patient. Did the mother understand what the doctor said? The nurses who are experienced in checking the mother's understanding of it are in a good position to learn how well the physician's

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messages have been transmitted. Sometimes their work in this respect is a kind of decoding. At the Kips Bay Child Health Station, nurses assigned to what is known as the Attitude Study Project * make a special point now of studying this problem.

The importance of stating things clearly is obvious enough, and examples of errors in this respect need not detain us. It will be more profitable in the time available to refer to other aspects of the problem, especially the patient's ability to accept advice when there is no difficulty in understanding it. Advice that according to the physician is easily understood and easily fulfilled, has been found to present a variety of difficulties to the mothers at our health stations. Numerous examples have been collected by the physicians and nurses attending the Attitude Study Project at Kips Bay Child Health Station. I am indebted to many of them for the examples to be cited.

The folly of giving advice to have the baby sleep in a separate room when there is none is obvious enough. Less obvious is the advice given a mother to take her child to a hospital for a routine blood count. In one of our cases, that simple requirement involved taking two other children along, eight bus fares, and hours of waiting at the hospital. It meant two half-days if a second appointment was made, and for the mother concerned, since it was no easy undertaking, she had to be convinced it was really important. A person who can come and go freely may lose sight of the complications involved in this simple undertaking. Probably that is one of the reasons why advice to attend a clinic for routine laboratory tests is so often unheeded. It is accepted very well, however, when the health station has such facilities close by and readily available, as at Bellevue where the well-baby clinic run by the Department of Health is located in a hospital, and services are integrated. The examples just cited were selected from a number that may be classified as practical or realistic. They are all problems of expediency. Most of the examples of failure to take advice offered by the nurses and physicians fell into this category.

A mother refused to accept advice to use evaporated canned milk for her infant. The point was made, clearly, that it was better and cheaper than the bottled milk she was using; but the mother strongly felt that the doctor was wrong. She came from Puerto Rico, and in her birth place people of standing and wealth used bottle milk; canned milk was only for the poor. Refusals of this type are classified under "cultural factors." Such factors were evident not only in refusals to accept advice but also in the employment of practices derived from national or family origins that run counter to our own conventions. Giving sips of wine or beer in addition to the infant's formula is one example of many, and our physicians have learned to be tolerant of such practices after surviving their initial horror. The test, after all, is the healthy baby.

Foreign customs, however, may become a deterrent to good health practices, as in the refusal to give the baby cod liver oil because it was not done in the "old country." In opposing that kind of a foreign custom we stand on firmer ground. A number of obstacles to good health practices in our own country as in others have been handed down to us over the generations by our ancestors—which include physicians.

Ignorance as a cause of rejecting advice stems from other sources than

* For the past four years the usual activities of the physician and nurse in well-baby stations in the New York City Department of Health have been under study. The regular members of the staff have been involved. This report is based on part of the data which have been accumulated.

tradition. Some mothers do not understand what the doctor means. Their difficulty may be due to lack of familiarity with the language, a problem more frequent in the health station than in private practice. The difficulty may, of course, be due to stupidity. However, our study of difficulties in comprehension indicates that advice and explanation can be understood by almost everyone if efforts are taken to select the most suitable words and phrases. Our problem is also that of selecting the words and phrases that are understood quickly.

I have considered so far three kinds of obstacles in the patient's response to advice. They are practical, cultural, and cognitive. The patients find it difficult to comply because the advice is not realistic or because it is in opposition to traditional ways or because it is not understood. These difficulties are obvious and once pointed out physician or nurse can readily comprehend them and in many instances find a solution. A fourth kind of obstacle, however, seems to require repeated demonstration before it is understood as well. That obstacle we have classified under the term "attitude." A mother was advised to add solid food to her baby's diet. She refused to do so. When her baby was 13 months old, she was given her first opportunity to talk about it. She gave a vivid description of an experience a few months previously when the baby "almost choked to death" trying to swallow a piece of bread. Thereafter she kept him on strained foods. She said "he literally can't swallow. . . . His bite is good but he can't swallow."

She was asked how she, herself, tried to solve the problem. Had she found any solid food that he could take? Yes, she had tried small pieces of banana and he managed well. That was encouraging; it meant that her fear was not a rigid barrier to advice on feeding. She had also shown initiative. Could it be encouraged? She was told that she had had a frightening experience, that it took some time to get over it and that her first attempt to introduce solid food again showed real courage. What was to be her next step? The mother hesitated awhile and then said "I'll cook a carrot and give it to him whole. I'll put it in his own hand and not chop it up and mash it." The problem was then solved by ratifying and encouraging the mother's own methods. The original difficulty in accepting the doctor's advice was due to fear. It is an example of a large number that are due to emotional factors. Such difficulties are not due to the fact that the physician is advising something that is impractical or opposed to the mother's customs or religion, or something that is not understood. It is due to feelings engendered in the patient by the particular advice that is offered, or by advice generally, or by the physician himself.

The classifications we have used are merely convenient ways of listing the factors and studying them. They are not intended to be, indeed they cannot be, absolute. Any example may reveal a variety of factors. For example, it was found that the advice to get a blood count for her baby, an example previously cited, was rejected by a mother because she was afraid of what it might reveal. Practical difficulties were also present. Anxiety, however, seemed to be the major obstacle. On the other hand another mother accepted the same advice in spite of real hardship also because of anxiety; the anxiety to do everything possible for her baby. In spite of the variety of factors that may be found in the explanation of such obstacles, usually, according to our experience, one factor outweighs the others.

All the difficulties in the response of patients to advice have been considered thus far in terms of specific situations.

Now let us take a different point of view and consider not what is said but how it is said; not the content of advice but the manner of dispensing it. Some doctors give advice in a tentative or explanatory way. Some, more old-fashioned, give the same kind of advice in an authoritative manner. They tell the mother without elaboration or explanation what she ought to do.

The same contrast is seen in giving reassurance. A mother was told that her baby had a heart murmur but there was nothing to worry about. Numerous explanations and repetitions had little effect in alleviating her anxiety. She harped on the subject of heart disease in every visit to the station; she asked innumerable questions and always left with a worried expression. One day an authoritarian type of physician was in attendance. He listened to her questions, placed the baby on the examining table, applied his stethoscope, then turned to her and said, accenting each word, "The heart? It is good!" He then ushered mother and baby quickly out of the examining room and beckoned to the next patient. Apparently the mother was relieved. The reassurance was effective.

Inquiry revealed that a number of women, by no means the majority, respond best to advice and reassurance of the authoritative kind. They are more likely European than American born. They have become imbued with a deep feeling that the voice of authority emanates only from people who behave like their strict fathers and the other strong male characters of their childhood. The physician learns in time to adapt his manner of giving advice to meet such needs. Our investigations have shown particularly the value of this kind of flexibility.

Advice may not be taken because it is too general; it may not be taken because it is too specific. In either case it may be taken, though resented. Gauging the generality and specificity of advice may be quite important. A mother complained that when put to bed, her baby always cried to be picked up. She had been advised many times to ignore its crying, but had always yielded to the baby. To a question about the feelings she experienced when the baby cried and she thought of ignoring it, she replied that it was cruel. In response to the physician's sympathetic rejoinder that it was expecting too much of her to ignore her baby and feel so brutal in doing so, she became surprisingly voluble. She told us about her dominating sister who tried to take over the household and who was quite critical of her. She told also how cruelly she, herself, had been treated as a child. The upshot of our brief interview was her willingness to accept the fact that however mean it was, she was not being kind to her baby by always yielding to it. How long did she think she could hold out? She said 10 minutes and then changed it to 15. The physician proposed five minutes by the clock daily for the first week of her ordeal. At the next visit to the station she seemed pleased with herself though she had not succeeded once in holding out the entire five minutes. She felt pleased because having held out at all she gained some kind of mastery; the feeling that she would "know what to do," that she was no longer helpless.

Advice to ignore is probably the most frequent piece of advice the pediatrician employs. Our example was selected to demonstrate the value of finding out, when necessary, the kind of situation to which this advice is applied, and the mother's feelings in utilizing it. Both give us some notion of the modifications necessary in the manner of giving advice to suit individual needs. Advice is not given in detail to mothers who are known to utilize it sensibly, modify it wisely; who in other words are experienced, intelligent, reliable, self-confi-

dent. Unfortunately we cannot present here a statistical statement of the frequencies of the kinds of advice given and the kinds of response they evoked. It requires no statistical enumeration, however, to know that there are many mothers who utilize advice very well and who require no special investigation or technic, and others, too, who are given advice that it superfluous.

Resentment is felt not only by mothers who get advice they do not need. It is felt also by some mothers who need it badly and in detail but resent the implication that they need it. The fact that they receive specific instruction is interpreted by them as proof that their ignorance was spotted and exposed. The examples cited illustrate again how the mother's attitude requires consideration in regard to the method of giving advice, besides the advice itself.

Advice in specific detail (particularly on the subject of formulas and preparation of foods) is generally most appreciated by primiparas, by mothers on their first visit to the health station, and by mothers who appear to be anxious and distrait, for whatever reason. These are clinical inferences based on the experience of the staff. The mother who is at the station for the first time is particularly in need of reassurance. Advice given in detail, advice in the form of instruction, which the nurse makes sure is mastered, may be a most effective kind of reassurance. The inexperienced and anxious mother who leaves the station with the feeling that now she knows just what to do, presents gratifying evidence of the value of this procedure.

In regard to the manner of giving advice, we have selected examples of the authoritative and the explanatory, of the general and the specific, and have tried to show that each form has an appropriate place. The selection of method (and in many cases the problem does not arise) is determined at a health station sometimes by knowledge gleaned from the record, sometimes by a mere glance at the mother, and sometimes by asking a few pertinent questions.

On the subject of advice, I have limited myself to certain aspects of the response to the advice and to the manner in which it is given. I have left out of consideration a number of problems relevant to this subject that might at least be mentioned. One of them has to do with a critical evaluation of the advice we give. How much of it is based on real knowledge, how much represents moral judgment, mere convention or personal bias?

Another problem has to do with the mother's response to advice as determined by her own judgment of the function of health station or of the physician or nurse. Some mothers, for example, regard the health station as a place you go to for inoculations and feeding formulas and nothing else. Some mothers do not want any advice; they come only for the purpose of getting reassurance. Some mothers differentiate the kind of advice you accept from a doctor and the kind you accept only from a nurse. All of these different assumptions on the part of mothers are relevant to our subject.

I have left out of consideration also a number of psychological problems regarding advice. When the doctor's advice is regarded as very important, we have found that it is most unusual that a mother will not discuss it with a number of people. There are also differences in attitude to the authenticity of advice that go beyond the manner, the personality, or prestige of the physician who gives it. The more technical the subject, the more likely beyond the ken of the patient, the more authentic the doctor may seem. The physician with an x-ray plate in his hand is less likely to be doubted than the physician

with no more than wise counsel. These are some of the psychological aspects of the subject that need exploring.

Though as you see, there are a number of gaps in this study, I hope that a sufficient number of pertinent examples have been presented to allow the privilege of giving some advice on how to give advice. To be effective, advice should be understandable, usable and acceptable to the individual's cultural values. Emotional factors that may present an obstacle must be recognized and dealt with. Our methods of doing so have been simply to encourage the mother to speak freely about any worrisome subjects in order to get at her feelings. When the barriers to taking the medicine have been dealt with, and the problem is reduced to the method of administration, then nurse or physician must consider its most palatable form.

In a previous paper * I gave a few examples to illustrate problems that arise when reassurance is given. One of the examples was selected to demonstrate that a mother's worry about her baby's development, which was not dispelled by reassurance, was really concerned not with the baby but with her mother-in-law's criticism. It was shown also that it was practical within the time available at a health station to find out about it. Since that time we have collected many more examples in which the mother's ostensible worry was really a facade behind which the real worry existed.

We have learned also that genuine worry or anxiety may not be dispelled by reassurance because it is not expressed fully or adequately. In the previous paper referred to, an example was given of a mother's worry concerning her boy's "growing pains." Was it rheumatic fever? It was not until the mother revealed its association with the death of a child she knew from a supposedly similar cause that reassurance was effective. Likewise, reassurance about a baby's chest had no effect until its association with the father's tuberculosis was brought out.

The examples reveal two kinds of situations which complicate the problem of reassurance. In one, the real worry is concealed. In the other, only part of the worry is revealed. As for other examples of reassurance, they illustrate, in the main, the kind of problems already formulated in regard to advice. If you will collect and classify the mother's responses to reassurance on the one topic alone, namely, the baby's weight, you will find examples in every category.

Reassuring a mother that there is nothing to worry about represents the pediatrician's most frequent psychotherapeutic activity. Nevertheless, this important procedure has not been made a proper object of study. It has been a purely ad lib device. I hope that the staff at Kips Bay and at other health stations will continue their studies of the simple psychological methods employed in our daily routine and enable us in time to refine them into devices more deliberately and skillfully employed.

* Levy, David M. Observations of Attitudes and Behavior in the Child Health Center. A.J.P.H. 41, 2: 182-190 (Feb.), 1951.

Vesicular Exanthema in the United States—Some Epidemiologic Aspects of the Disease

R. A. BANKOWSKI, D.V.M., Ph.D.

Having as we do this disease of pigs to thank for our recently won protective measure against human trichinosis, all of us will find an interest in this account of the past and recent history of vesicular exanthema.

Vesicular exanthema (VE) belongs to a group of contagious and infectious diseases of domestic animals. These diseases are caused by filtrable viruses and are characterized by acute febrile reactions in the course of which vesicular eruptions develop on the buccal and associated mucous membranes and other selected epithelial sites. There are three important infections in this group, foot-and-mouth disease, vesicular stomatitis, and vesicular exanthema. These vesiculating diseases so closely resemble each other that a differential diagnosis is clinically impossible.

Vesicular exanthema made its first apparent appearance in the southern part of California in 1932 as a disease occurring in swine. At first this infection was believed to be foot-and-mouth disease, but Dr. J. Traum of the University of California who studied this infectious agent in laboratory animals regarded it as a specific infection which was caused by an ultravirus, but which was distinct from foot-and-mouth disease and vesicular stomatitis.[1] He reported that this agent affected only swine and failed to affect other species of animals. The original source of this infection is still unknown. A further and an important observation made at this time was that the disease was found exclusively on ranches practicing the feeding of raw garbage to swine.

The incidence of vesicular exanthema in California from the first reported outbreak through 1952 is illustrated in Figure 1.[2] The first outbreaks, which occurred in the spring of 1932, were eradicated by the methods employed in a foot-and-mouth disease outbreak, consisting of the elimination of the swine by slaughter, cleaning and disinfection of the infected premises, pens, vehicles, and equipment, and thorough imposition of rigid quarantines. It was assumed, therefore, that no infective animal matter or material could have remained.[3] Nevertheless, the disease reappeared 11 months later about 70 miles distant from the previous outbreak. The procedure adopted for eradication of this second outbreak was in all respects the same as in the first instance except that area quarantines and restrictions were not enforced. It

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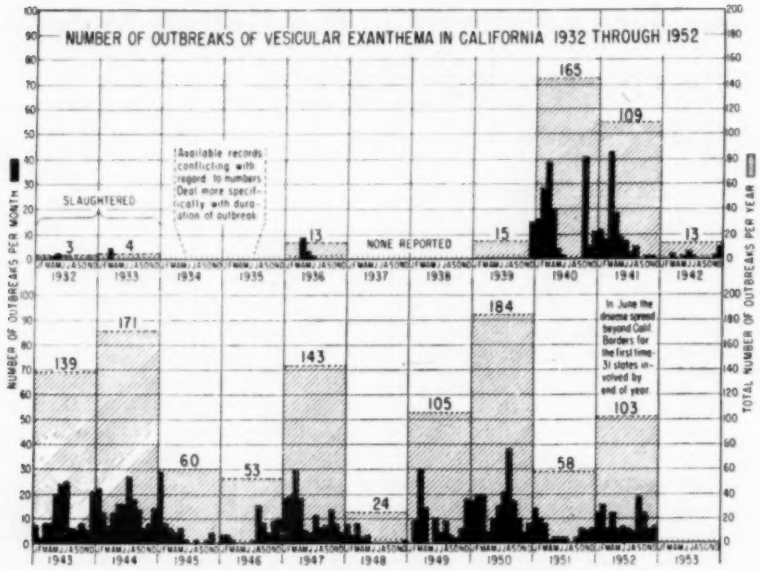
Figure 1



is still believed that no infected meat, meat scraps, or infected material could have remained to constitute a possible cause of the third outbreak which occurred 500 miles distant in the northern part of the state in June, 1934. As there was no contact or interchange of persons, animals, or equipment between these ranches, no satisfactory explanation can be given for the occurrence of the infections.

Just as suddenly as the disease was discovered, vesicular exanthema disappeared and was not recognized or reported for a period of three and one-half years. Then, during the winter months of 1939, an outbreak was reported on a garbage-feeding ranch in the northern part of the state. Hereafter, outbreaks steadily increased in numbers during the intervening 14 years and vesicular exanthema has today become one of the major swine disease problems in the state.

The erratic and unpredictable behavior of the disease noted during the early appearances seems to be characteristic of this infection. The incidence of vesicular exanthema does not appear to be seasonal or associated with precipitation. In June of 1952, as had been anticipated for many years, the disease appeared outside of the borders of the State of California for the first time and during the following six weeks was reported in 16 states.[4] Efforts to stem the tide of this epizootic failed and within the next 13 months the disease was reported from 42 states and the District of Columbia.

Within an outbreak the disease is spread by the infected animals or by contaminated materials and objects, but there is considerable evidence that the practice of feeding raw garbage to hogs has been the chief means of perpetuating this disease in California. Of 20,000 swine-raising establishments,

about 400 practice feeding of raw garbage to swine. During the past 20 years we have had approximately 1,400 outbreaks of vesicular exanthema which were found predominantly on these garbage-feeding establishments. Only 53 outbreaks have been found on the 19,600 grain-feeding ranches, and in nearly all of these cases the outbreaks have been attributed to the exchange of hogs or having a history of feeding raw garbage. A careful study of most of these 53 outbreaks showed no incidence of recurrence of the infection on the ranch after the disease had run its course and the hogs had recovered. This evidence, substantiated by experimental proof that carcasses of infected animals contain virus,[5] indicates that raw garbage containing meat scraps is one of the chief means of spreading VE in California.

Early epidemiologic studies of the inconsistent nature of the disease confirmed the existence of more than one immunologic type of the virus. Four immunologically distinct types were reported by Crawford,[6] but unfortunately the original isolates are no longer available. However, current studies of outbreaks occurring in California resulted in the recovery of three distinct types: the latter were designated as types F, B, and A, but more recently have been reclassified as immunotypes A_{48}, B_{51}, and C_{52}, respectively, in conformity with the recommendations of the U. S. Bureau of Animal Industry. New immunologically distinct types are to be designated by the next letter and include the year of isolation in an effort to establish type standards.*

Since the three important vesiculating diseases, foot-and-mouth disease, vesicular stomatitis, and vesicular exanthema, so closely resemble each other, an accurate and rapid differentiation is of extreme importance. A method which has been in use for a good many years is the animal inoculation test,[7] carried out by inoculating a number of species of animals with the suspected material and the incriminating disease being produced in only those animals which are susceptible to the virus present in the material (Table 1). There are several points relative to this procedure that must be considered: (1) known susceptible animals are not always available in the vicinity of the outbreak; (2) from four to 10 days are required for symptoms to develop in susceptible hosts; and (3) at times it is extremely difficult to arrive at a definite conclusion following inoculation of one group of animals.

Table 1—Susceptibility of Various Species of Animals to Viruses of Exanthematous Diseases

Species	Foot-and-Mouth Disease	Vesicular Stomatitis	Vesicular Exanthema
Horse	−	+	±
Cattle	+	+	−
Swine	+	+	+
Sheep	+	±*	−
Guinea pigs	+	+	∓†

* Controversial among investigators
† Reported on rare occasions

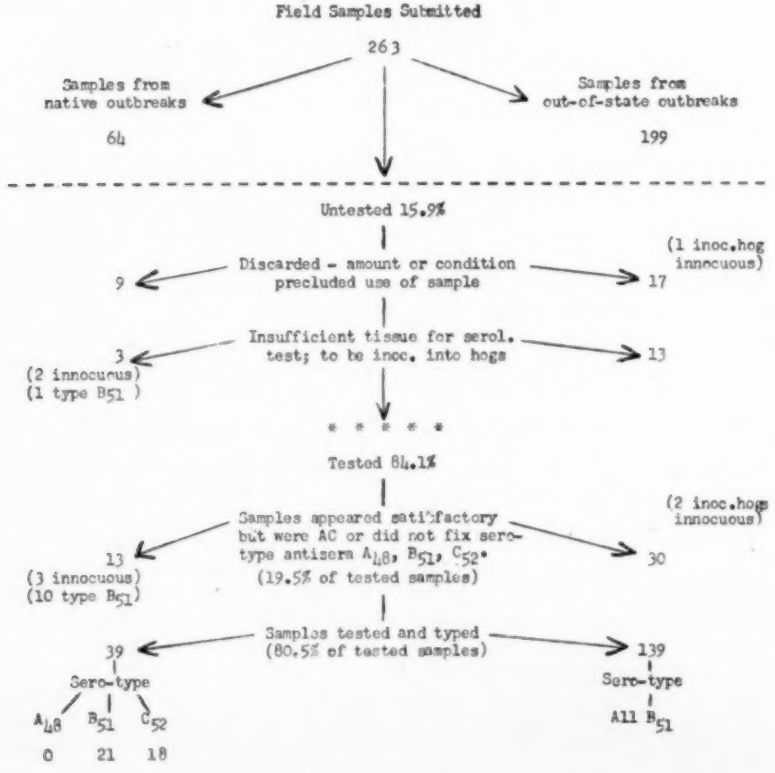
Recently, a complement-fixation test was introduced[8] which has proved to be a great aid in making a rapid diagnosis and at the same time is capable of differentiating the virus into its immunologic type. Since the development of this test, 263 samples of infected material from hogs in the field have been submitted by veterinarians of the California Bureau of Livestock Disease Control to the laboratory for study.† Unfortunately, all samples submitted were not found to be usable, especially

* The fourth immunologic type of VE virus was recovered and identified in an outbreak which occurred in October, 1953, in Riverside, Calif. The virus was designated as type D_{53}.[9]

† It is to be noted that no infectious material is sent to the laboratory prior to being inoculated and observed in calves by official veterinarians to exclude the possibility of transporting foot-and-mouth disease virus through public channels.

in the beginning of this program. Careful collection and handling of the samples appear to be a very important aspect of this procedure. In some cases (15.9 per cent) the material or amount of tissue collected was found to be decomposed or insufficient for the test (a minimum of 1 gm. is necessary). Other samples which were apparently collected in the late stages of the disease, or were improperly collected and stored, were found to be anticomplementary, or did not fix the antisera for Types A, B, or C VE virus. It is axiomatic that such samples, if they contain viable virus, could be inoculated into susceptible hogs to produce a sufficient amount of tissue for the test; however, the advantage of speed in the diagnosis of a vesicular disease would be defeated. Figure 2 shows that of the samples which were suitable for testing 80.5 per cent could be successfully typed. It is interesting to observe from the results that both Types B and C were encountered in outbreaks occurring in garbage-feeding establishments in California, whereas without exception only Type B virus was found in diseased hogs that were shipped into the state from in-

Figure 2—Results of Serological Testing of Samples Obtained from Outbreaks of Vesicular Exanthema in California Between October, 1951, and June, 1953



fected areas. Type A virus was not detected in any of the samples tested; however, the 64 samples from native outbreaks were obtained from hogs raised on premises located predominantly in the north-central part of the state, whereas the original Type A virus was isolated in the southern part of the state.

A study of the history and incidence of vesicular exanthema as it occurs in California indicates that the disease has no seasonal predominance and is spread by contact with infected animals or products from infected animals that often are found in raw garbage. The complement-fixation test—which employs vesicular material harvested from infected hogs in the field—appears to be a great aid in the diagnosis and differentiation of this disease. From the serologic studies of a large number of outbreaks originating in various states in the country it became evident that only one type (B) of VE virus escaped from California and it can be presumed that the epizootic involving most of the states resulted from a single incident.

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State Tuberculosis Programs

The Public Health Service has published "State Tuberculosis Control Programs." Included is selected information reported in the state public health plans submitted by state health departments for the fiscal years 1954 and 1955. Beginning in 1954 state health agencies had the choice of preparing a narrative description of the health agency's planned operation or the Annual Combined Report and Plan form. In 36 state narrative reports a description of the health needs and problems pertinent to tuberculosis control was included.

Hence, the present report reflects a variety of inadequacies and problems—shortage of personnel, shortage of hospital beds for tuberculosis, absence of local health departments, need for more intensive case finding, and extension of mass surveys are among the current problems indicated. The programs and plans are described state by state for each region of the Public Health Service. Public Health Service Bulletin No. 396, Public Health Service, Washington 25, D.C. Apparently free.

Evaluation of Mandatory Reporting of Cerebral Palsy

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Some of the uses to which case reports of cerebral palsy might be put are suggested in a discussion of the paucity of practical information derived from a three-year experience with state-wide compulsory reporting.

Reporting of certain communicable diseases was one of the first procedures to be instituted in modern public health practice. For purposes of national morbidity reporting, the list of reportable diseases is still generally restricted to communicable diseases.[1] Other than on the national scene, however, some state or local departments of health require reporting of a variety of other diseases and conditions, including cancer, narcotic addiction, rheumatic fever, premature birth, cerebral palsy, epilepsy, blindness, and deafness. The limit of the list has probably not been reached. Whenever some disease or condition begins to attract widespread public or professional interest, almost immediately the suggestion is heard that it be made reportable.

Morbidity reporting, whether on a mandatory or voluntary basis, is neither a simple nor an inexpensive procedure, and the gathering of morbidity statistics has rightly been questioned.[2] It involves time of personnel in planning and publicizing the reporting procedure, in routing the reports, and in final tabulation and analysis of the assembled material. Furthermore, requiring practicing physicians to make the effort entailed in reporting a growing list of conditions affects relationships between the medical profession and the health agency responsible for administration of the reporting procedure. In these days when all public health programs are in a state of transition and trained personnel are increasingly hard to recruit, critical appraisal of every public health procedure is indicated. It is with these factors in mind that a review of mandatory reporting of cerebral palsy in New York State was instituted and carried out.

General Background

For about 30 years children with cerebral palsy have received diagnostic services in the orthopedic clinics conducted by the New York State Department of Health. Since 1926 they have been eligible for financial aid for surgical and other rehabilitative services under the state-aided program for physically handicapped children. In the mid-1940's public and professional interest in New York State brought the special needs of children with cerebral palsy to the forefront and a number of specific measures relating to cerebral palsy were adopted shortly afterward. The Joint Legislative Committee to Study the Problem of Cerebral Palsy was created in 1946 when special grants were provided for research in the etiology and treatment of the condition. An intensive survey was conducted in Schenectady County to determine the prevalence of cerebral palsy, to obtain more information on the types of facili-

ties and services needed, and to learn more about pertinent social and economic factors involved. Funds were made available for grants to cerebral palsy diagnostic and treatment centers to encourage them to improve and expand their services. Finally, in 1949, the State Legislature amended the Public Health Law to make the reporting of cerebral palsy by physicians mandatory after January 1, 1950.

It should be noted, parenthetically, that neither the New York State Department of Health nor the Joint Legislative Committee had recommended that cerebral palsy be made a reportable condition. Registers of physically handicapped persons, including those with cerebral palsy, were already in existence. These registers contain current information on all "active cases" of a group of physically handicapping conditions in persons coming to the attention of the state or local departments of health. Children are maintained on the register so long as follow-up is indicated to insure maximum benefits from available health services.

The new law required that physicians submit case reports for persons with cerebral palsy under 18 years of age who were under their care as of January 1, 1950. Thereafter, other cases coming to their attention, whatever their age, were to be similarly reported. Mandatory reporting is applicable in Upstate New York, which refers to New York State exclusive of New York City.

The State Department of Health gave widespread publicity to the new requirement. Letters were sent to physicians in private practice, to all known diagnostic and treatment centers in which persons with cerebral palsy might be given care, to administrators of special school classes, and to institutions under the State Department of Mental Hygiene having facilities for the care of persons with cerebral palsy. Detailed memoranda describing the policies and procedures involved were sent to all district state health officers and to county and city health commissioners. An article on the reporting of cerebral palsy was published in the New York State Journal of Medicine.[3] An editorial appeared in the same issue of the journal, urging all practicing physicians in the state to cooperate in meeting the requirements of the new law.

For purposes of reporting, cerebral palsy was defined as a group of conditions affecting the control of the voluntary motor system, originating in lesions of the brain which may have been present at birth or which may have developed at any time after birth. An arbitrary upper limit of 12 years of age was set as the age of onset for reportable cases because it was felt that the care of persons developing cerebral palsy early in their developmental period differed markedly from the care of those whose condition developed later in life.

Although an attempt was made to keep the reporting procedure as simple as possible, the chronicity of cerebral palsy and the possibility of duplication of reports necessitated cross-checks at several points along the line. All reports were routed through the full-time local health office, i.e., the county or city departments of health where such exist, or the district state health office in other areas. The initial report from private physicians consisted only of identifying information. In cases not previously coming to attention, the reporting physician was requested to complete a

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supplemental report. The cerebral palsy centers submitted detailed reports on each child under their care. Information was obtained on the severity of the condition, on the extent of involvement, on the type of presenting signs and, in patients of school age, on the school status of the child. After reporting had been in effect for some time, the full-time health office checked all reports against its register of physically handicapped persons and prepared reports for those cases in the register not otherwise reported. All reports were then forwarded to the central office of the State Department of Health. There the information was coded and a punch card prepared for each case.

Method of Study

The Public Health Law gave no indication of the purposes of mandatory reporting against which we might measure results of the procedure. This study will evaluate mandatory reporting of cerebral palsy in terms of what we consider reasonable objectives. These are: (1) to promote early case finding, so that patients with cerebral palsy might secure maximum benefit from available facilities; (2) to obtain descriptive information on individual patients for program planning and research purposes; and (3) to secure information of value for epidemiologic study.

The punch card file of reported cases of cerebral palsy was carefully reviewed to eliminate duplicates and detect omissions. After sorting these cards by county, lists of reports were prepared for each county, containing sufficient identifying information for each case, and forwarded to the full-time health offices concerned. The health offices were requested to review these lists carefully and to furnish information about any changes in status of the reported cases, such as change of address, death, or institutionalization. In addition, they were asked to prepare report forms for any cases known to them which were not included on the list. The same procedure was followed for institutions for the mentally retarded administered by the State Department of Mental Hygiene. After this review the lists were returned to the State Department of Health and the necessary corrections made on its records. All tabulations in the study are based on this revised information.

Only cases under 18 years of age at the time of report were analyzed. This was done because the reporting law required initial reporting only for this age group. As was to be expected, reports on individual cases were received in many instances from more than one source.

Results of Study

During the period of the present study, from January 1, 1950 through December 31, 1952, a total of 4,375 cases of cerebral palsy were reported to the New York State Department of Health (Table 1). Of these, 3,299, or 75 per cent, were under 18 years of age at the time of report. The bulk of the reported cases, most of which represented persons previously known on the

Table 1—Reported Cases of Cerebral Palsy by Age at Time of Report and Year of Report, Upstate New York,* 1950–1952

Age (in Years) †	Total	Year of Report		
		1950	1951	1952
All Ages	4,375	3,278	499	598
Under 18 years	3,299	2,279	462	558
18 years and over	1,076	999	37	40

* Residents of New York State, exclusive of New York City
† Birthday attained in year of report

Department of Health's register of handicapped persons or who were under care when reporting went into effect, were reported during 1950.

Early Case Finding—Consider first the effectiveness of mandatory reporting in promoting early case finding to encourage maximum benefits for the patient. Cases of cerebral palsy are reported from a number of sources. The sequence of case reports for a given patient should reflect the order in which medical attention is sought. In most instances, one would expect that the first report for newly diagnosed cases would originate with the patient's family physician. This would be true if the private physician made the diagnosis himself, or if he received a report of a consultation from some community facility available for the purpose. A second report might be expected from physicians in diagnostic and treatment facilities in the community. These might be either specialized cerebral palsy facilities such as special diagnostic and treatment centers, special screening clinics, special classes, or special hospital clinics, designated generically as cerebral palsy centers in the following discussion, or they might come from a variety of other facilities such as orthopedic or child guidance clinics. Finally, after a patient had exhausted these facilities, a third report might come from an institution for the mentally retarded for children admitted to these institutions.

Actually, only 133 case reports, or 4 per cent of the three-year total, came from private physicians; whereas 56 per cent were submitted by special cerebral palsy centers, 25 per cent by other community facilities, and 15 per cent by state institutions for the mentally retarded (Table 2). Even in 1952, after the reporting procedure had become relatively stabilized, and when one would have expected that much of the backlog of cases would have been reported, only 11 of the 558 cases reported, or 2 per

Table 2—Reported Cases of Cerebral Palsy Under 18 Years of Age at Time of Report, by Source and Year of Report, Upstate New York,* 1950–1952

Source of Report †	All Years		Year of Report					
			1950		1951		1952	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Percent
All Sources	3,299	100	2,279	100	462	100	558	100
Cerebral palsy center	1,842	56	1,141	50	316	68	385	68
Private physician	133	4	105	5	17	4	11	2
State institution	509	15	440	19	27	6	42	8
Orthopedic clinic and others	815	25	593	26	102	22	120	22

* Residents of New York State, exclusive of New York City

† Classification of Sources of Cerebral Palsy Case Reports:

I. Cerebral palsy center
  A. Cerebral palsy diagnostic and treatment centers
  B. Special cerebral palsy outpatient departments of hospitals
  C. Cerebral palsy school classes
  D. Cerebral palsy screening clinics

II. Private physician

III. State schools and other institutions for mentally retarded children

IV. All other sources, including:
  A. Orthopedic clinics
  B. Child guidance clinics

cent of the total, were reported initially by private physicians. On the other hand, 42 cases, or 8 per cent, were still reported initially by institutions for the mentally retarded; whereas one should expect that hardly any children would be seen for the first time in such institutions. Of all the cases reported in 1952, 68 per cent came initially from special cerebral palsy facilities.

The low rate of reporting by private physicians may have been due in large part to their expectation that cases would be reported by the community agencies seeing the children in consultation or in the provision of therapeutic or rehabilitative services. Whatever the explanation, mandatory reporting in itself does not necessarily result in the reporting of cases by private physicians who, presumably, first see a large proportion of children with cerebral palsy. Since most of the patients are already under the care of available community agencies when they are first reported, it seems reasonable to conclude that mandatory reporting has fallen short of the first objective.

As a further test of the value of mandatory reporting, the age distribution of initially reported cases was examined for each of the three calendar years studied. Cases reported during the first year of mandatory reporting represent the known cases under 18 years of age in 1950. Cases reported in 1951 and 1952 should represent new cases coming to the attention of private physicians and community facilities. It is generally accepted that at least 90 per cent of the cases of cerebral palsy in this age group are related to genetic or congenital factors and should be clearly recognizable clinically before five years of age. In view of this, if mandatory reporting is to fulfill its first objective, a basis for early case finding, newly reported cases under five years of age should account for over 90 per cent of cases under 18 years of age. We have only two years of cases which we can examine from this point of view, namely, 1951 and 1952. The age distribution of newly reported cases for those two years is essentially the same, with only 50 per cent of reported cases under 18 falling in the age group under five years of age. Even as late as 1952, as many as 14 per cent of the reported cases were between 10 and 18 years of age (Table 3). This is shown more clearly in a graphic manner in Figure 1,

Table 3—Reported Cases of Cerebral Palsy Under 18 Years of Age at Time of Report, by Age and Year of First Report, Upstate New York,* 1950–1952

Age (in Years) †	Year of First Report					
	1950		1951		1952	
	No.	Per cent	No.	Per cent	No.	Per cent
All Ages	2,279	100	462	100	558	100
Under 5	542	24	228	50	276	49
5–9	900	40	158	34	205	37
10–14	581	25	53	11	56	10
15–17	256	11	23	5	21	4

* Residents of New York State, exclusive of New York City
† Birthday attained in year of report

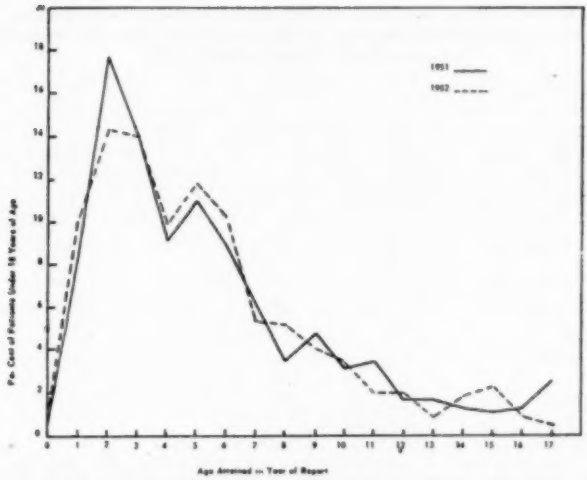

Figure 1—Distribution of Cerebral Palsy Patients Under 18 Years of Age in Year Reported, by Age, Upstate New York, 1951–1952

showing the age distribution by individual years of age for the years 1951 and 1952. The similarity of these two curves indicates that there has not been any improvement in early case reporting and precludes the implementation of follow-up in accordance with our first objective.

Data on Clinical Status—Next the effectiveness of mandatory reporting in providing descriptive data about persons with cerebral palsy is worth examination. Such information could be of value in planning health services and evaluating the adequacy of existing services for patients with cerebral palsy.

The validity of descriptive information may be tested to some extent by comparing data on case reports for individual patients who were reported from more than one source. One of the questions asked on the case reports relates to the severity of physical limitations. The report form allows a choice of three qualifying words: mild, moderate, or severe. Of 152 cases in which reports were received from two types of sources, such as special cerebral palsy centers as opposed to other noninstitutional sources, there was wide disagreement between the two sources. For example, of 50 cases checked as severe by the latter, only 26 were similarly reported by the cerebral palsy centers. Of 40 considered mild by the other noninstitutional sources, only 25 were checked as mild by the centers.

With respect to the type of involvement reported by two sources, there was also a wide range of disagreement (Table 4). In this table comparison was made only when, at most, one type of involvement was checked in each case report from different sources. There were 129 such cases available for study. Of 87 cases reported as spastic by a cerebral palsy center, 76 were similarly reported by the second source. Likewise, of 10 cases reported as ataxic by cerebral palsy centers, only four were similarly reported by the other agencies or persons.

Even when comparison is made between case reports received from two specialized cerebral palsy facilities, marked disagreement is found. Of 56

Table 4—Type of Involvement of 129 Cerebral Palsy Cases with at Most One Type of Involvement as Reported by Different Sources, Upstate New York,* 1950–1952

Private Physician, Orthopedic Clinic and Others †	Cerebral Palsy Center ‡					
	Total	Spasticity	Athetosis	Rigidity	Ataxia	Not Stated
Total	129	87	16	12	10	4
Spasticity	90	76	7	4	2	1
Athetosis	15	2	9	1	2	1
Rigidity	8	2	..	6	..	..
Ataxia	6	2	..	..	4	..
Not Stated	10	5	..	1	2	2

* Residents of New York State, exclusive of New York City
† Includes: Private physicians, orthopedic clinics, and child guidance clinics
‡ Includes: Cerebral palsy diagnostic and treatment centers, special cerebral palsy outpatient departments of hospitals, cerebral palsy school classes, and cerebral palsy screening clinics

cases reported as spastic by one cerebral palsy center, only 39 were similarly checked by a second center. None of the six cases checked by one center as showing rigidity as the only clinical manifestation of motor involvement was similarly checked by the second center, five of these being considered spastic, and one athetoid. It is acknowledged that there is often considerable disagreement on the nature of the motor involvement in cerebral palsy even when a patient is evaluated by highly qualified physicians in the same medical center. This disagreement would naturally be compounded when the patient is seen in different centers. The degree of difference in descriptive information observed on the case reports is therefore hardly a surprise.

In planning for needed facilities, one important factor to be considered is the intelligence level of children with cerebral palsy. Since this is frequently very difficult to determine in the presence of motor, speech, and hearing handicaps, an adequate determination of intellectual potentialities could not be expected at the time of initial report or for some time thereafter. Hence, no question about intelligence status was included on the report forms. However, an item on school status was included on the form. Even this was misinterpreted in a large proportion of reports, so that the information submitted on school status was of very limited value. Our experience has shown, therefore, that for cerebral palsy mandatory reporting did not enable us to obtain descriptive information about individual patients which could be relied upon in planning or evaluating the adequacy of health services.

Epidemiologic Data—Finally, let us look into the effectiveness of mandatory reporting in providing data of epidemiologic significance. For noncommunicable conditions the desire to obtain more complete information on incidence and prevalence is often the immediate reason for instituting reporting. Case reports received during the study period were used to estimate the prevalence of cerebral palsy as of December 31, 1952 (Table 5). After removal of 300 cases known to have died, moved

Table 5—Reported Prevalence of Cerebral Palsy Among Children Under 18 Years of Age, Upstate New York * and Schenectady County, December 31, 1952

Age (in Years)	Upstate New York			Schenectady County		
	Cases in Register	Estimated Population †	Rate per 100,000	Cases in Register	Estimated Population †	Rate per 100,000
All Ages	2,999	2,214,067	135	92	42,288	218
Under 5	575	781,797	74	7	15,957	44
5–9	1,314	657,545	200	38	12,738	298
10–14	772	507,312	152	37	9,036	409
15–17	338	267,413	126	10	4,557	219

* Residents of New York State, exclusive of New York City
† Estimate by the Office of Vital Statistics, New York State Department of Health

out of Upstate New York, or passed their 18th birthday, 2,999 cases remained in an estimated population of 2,214,067 under 18 years of age, a prevalence of 135 per 100,000. Among children under five years of age, a rate of 74 per 100,000 was found. The highest prevalence rate, 200 per 100,000, was found in the age group five through nine years, with a drop to 152 in the 10 through 14-year group, and 126 in the group 15 through 17 years of age.

It is of interest to compare these reported prevalence rates with those obtained through different types of surveys in New York State and elsewhere. In 1948 a survey of the prevalence of cerebral palsy in Schenectady County was made by the New York State Department of Health for the Joint Legislative Committee to Study the Problem of Cerebral Palsy.[4] At that time all possible sources of known cases of cerebral palsy were tapped and a roster of known cases prepared. In addition, a house-to-house canvass was made of a representative sample of about 16 per cent of the total population and the rate of previously unknown cases projected for the entire county to give an estimated prevalence rate. The known and estimated prevalence rates by age groups are given in Table 6. Comparison of these survey rates with the reported rates for New York State as given in Table 5 shows an excess in all the age-specific rates in the Schenectady County survey.

The prevalence rates in the Schenectady survey have also been found to be considerably higher than those found elsewhere in surveys since 1948. A survey was conducted in the State of Connecticut in 1950 in which an intensive search was made for all cases of cerebral palsy, but without resort to a house-to-house canvass.[5] After reviewing a sample group of cases for accuracy of diagnosis, minimum and maximum estimates of the cerebral palsy prevalence rates were derived. Even the maximum rate of 183 per 100,000 persons under 21 years of age fell far under the rate of 240 previously known cases under 18 years of age in the Schenectady survey and was less than half of the estimated rate derived from the survey. In the age group five through nine years of age, for example, the rate of previously known cases in Schenectady County was 440 per 100,000, as compared with a maximum rate of 220 in Connecticut.

Table 6—Prevalence of Cerebral Palsy Among Children Under 18 Years of Age, Schenectady County, N. Y., 1948 and 1952

Age (in Years)	Rate per 100,000 Population		
	Schenectady County Survey (as of July 1, 1948)		
	Prevalence of Known Cases	Estimated Prevalence *	Reported Prevalence as of December 31, 1952
All Ages	240	414	218
Under 5	125	267	44
5–9	440	634	298
10–14	253	507	409
15–17	149	261	219

* Estimates obtained by inclusion of cases found on house-to-house survey

Reports from Great Britain disclose even lower prevalence rates. One survey in an area of the Midlands, including the City of Birmingham, showed a rate of 90 per 100,000 children of school age.[6] Another report, from the City of Leeds in 1951, disclosed a rate of 160 per 100,000 children of school age, exclusive of those previously reported to the mental health authority as "uneducable."[7] Only the estimates proposed by Phelps in 1940[8] approach the figures in the Schenectady survey for previously known cases, and even his figures are far short of projected estimates after inclusion of cases found in the Schenectady house-to-house canvass. The validity of the rates proposed by Phelps cannot be appraised, since the methods used in deriving these rates were not adequately described.

Does mandatory reporting add any information bearing on the higher prevalence rates in the Schenectady County survey? The prevalence rate for Schenectady County based on mandatory reporting was found to be 61 per cent higher than for the upstate area as a whole (Table 5). Why this should be so, we can only conjecture. Schenectady County has had well established special medical and educational facilities for many years. These facilities are readily accessible to almost the entire population because of the small area of the county. The prevalence rates based on mandatory reporting in the present study are higher in general in the counties having specialized cerebral palsy diagnostic and treatment centers (Table 7). A rate of 125 or more per 100,000 was found in 15 of 22 counties having such centers, as com-

Table 7—Reported Prevalence of Cerebral Palsy Among Children Under 18 Years of Age and Availability of Special Facilities in Counties of Upstate New York,* December 31, 1952

Reported Prevalence (per 100,000 Population) †	Total	Counties with Cerebral Palsy Center	Counties with No Cerebral Palsy Center
Total	57	22	35
Under 125	29	7	22
125 and over	28	15	13

* Residents of New York State, exclusive of New York City

† Estimate by the Office of Vital Statistics, New York State Department of Health

pared with only 13 of 35 counties lacking centers. This may be ascribed to several factors. More children with cerebral palsy may come to attention when special community facilities are available. Reporting of known cases may be more complete when persons with cerebral palsy come to the attention of medical specialists particularly interested in the condition. Finally, the families of children having cerebral palsy may move into the counties where special medical and educational services are available. All three factors may be operating in Schenectady County. Why so few children under five years of age were reported in Schenectady County is not readily explainable. In any event, mandatory reporting did not provide any epidemiologic data that could be used to explain the unusually high prevalence rates in children under 18 years of age in Schenectady County.

Summary and Conclusions

Cerebral palsy has been a reportable condition in Upstate New York since January 1, 1950. The present study is an evaluation of the procedure after three years of experience from 1950 through 1952. Of the 4,375 cases reported, 3,299 cases under 18 years of age at the time of report were included in the current study.

Only 4 per cent of initial case reports were submitted by private physicians, the remainder coming from special community facilities, after patients were already under specialized care. Therefore, mandatory reporting of cerebral palsy does not appear to have been an effective case-finding technic for promoting earlier use of available facilities.

In view of the unavailability of certain information, such as intelligence levels, and the incomplete and conflicting nature of information on the extent and types of physical involvement, mandatory reporting of cerebral palsy did not provide information of value in planning or evaluating health services.

The prevalence rate of 135 per 100,000 persons under 18 years of age in Upstate New York, found through mandatory reporting, has been compared with prevalence rates found in special surveys in New York State and elsewhere. The epidemiologic data obtained from mandatory reporting were not helpful in explaining the differences in prevalence rates found in the various surveys. The many difficulties encountered in interpreting the data from mandatory reporting raise serious questions regarding its reliability for epidemiologic use in studying the problem of cerebral palsy.

It is apparent that a large body of information has been gathered through mandatory reporting of cerebral palsy. We have pointed out some of the difficulties encountered in any attempt to interpret the data so obtained. We have seen that a large proportion of case reports come from established community health agencies and very few from private physicians. Essentially the same information could therefore have been obtained, if desired, from summary reports submitted periodically by the community health agencies without resort to a cumbersome, expensive, and time-consuming universal reporting system.

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Appraisal and Priority Standards for Community Hospital Surveys

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The clear purpose of this paper is to foster community interest in hospitals. Their importance to all social services justifies a thorough study of the data relevant to present and future needs. Facts become the solid basis for action. Information becomes the well-spring of inspiration.

"The Public should exercise better control over its capital investment in hospitals. . . . The quality of care is, of course, in the hands of physicians and the professions concerned with hospitalization. . . . But the public is entitled to control the expenditures. . . . Any community should view with alarm the expansion of hospital facilities except in response to a recognized immediate or future need." * Published in the year 1930, the foregoing statement referred to widespread activity in hospital construction during the preceding decade, when community coordination was not taken seriously. Times have changed—hospital planning is now a primary concern of local hospital bodies, philanthropic foundations, and governmental agencies.

Planning is not accomplished "in the abstract"; it involves daily actions by administrators, physicians, and trustees. Coordination among hospitals should have its counterpart in the program of each institution. Standards are the same for one hospital as for a group of them. Personnel and facilities must be utilized to conserve human and financial resources.

Expansion of hospital plant and equipment is not an unmixed blessing. New construction costs are inevitably followed by expenditures equal to 10 or 20 times the capital investment. These are necessary to finance service during the useful life of the buildings and equipment. After a community spends $2,000,000 to construct or expand a hospital, it must raise from $700,000 to $1,000,000 for annual operating expenses, assuming a constant price level and full utilization.

A community must anticipate trends in hospital service. These are more important than mileage data, hospital days per death, bed death ratios, and beds per population. Six appraisal standards for community hospital surveys are submitted, which may serve as practical guides for programs of capital investment and current support. The article ends with four priority standards that appear justified in the light of modern trends in hospital service.

Appraisal Standards

1. Evidence of unfilled public need for new facilities—Plans for a single institution require data concerning all local hospitals and those in neighboring communities. Some potential contributors may not be interested in the expansion of a particular hospital. High occupancy at one hospital is not a convincing argument to an employer or group of workers who live and work in another part of the city, or to physicians

* Rorem, C. Rufus. The Public's Investment in Hospitals. Chicago, Ill.: University of Chicago Press, 1930, p. 216.

who use other hospitals. A waiting list at one hospital does not necessarily justify expansion at the expense of the community. The writer recently surveyed a five-hospital city where the average bed occupancy ranged from 50 per cent to 95 per cent of available bed complement. At the peak of occupancy, there were more empty beds, in all hospitals combined, than the rated capacity of the largest hospital in the city.

A noticeable imbalance of bed utilization becomes a matter of concern to anyone who is asked to finance the expansion of a specific hospital. Some people will think or say, "Why don't the doctors and patients use the other institutions?" Trustees of one hospital may argue that it needs radium therapy apparatus because it is also available elsewhere, but a potential contributor may feel differently.

A community's needs may not always coincide with the ambitions of a single hospital's trustees or attending staff, or even the philanthropic preference of a large contributor. Institutional pride has been a great stimulus in many cities and population areas, but sooner or later someone must pay the total bill for hospital care. It is not the first cost; it is the upkeep which creates most financial problems for hospitals.

Idle plant and equipment are presumptive evidence that public needs have already been served though the presumption may be wrong. Professional facilities and personnel may be overworked in some institutions, while expensive equipment and well paid technicians elsewhere may be idle for large portions of each day or week. Data for measuring community needs include such facts as the following, applicable to several years: bed capacity of each institution, classified by beds per room and special limitations on their use; admissions and patient days per hospital, classified by accommodations, diagnoses, and seasonal variation; and check lists of diagnostic and treatment facilities at each institution, with monthly and annual data as to volume of professional services furnished for both inpatient and outpatients. There is need for objectivity in measuring community need, and the judgment of an "outsider" may be required to appraise the conflicting interests of local groups.

2. Prospects for utilization of present and expanded facilities—The public needs evidence to justify the prospects, and the "prospectus." Detailed questions arise: Have the waiting lists for elective hospitalization resulted from inflexible classification of room accommodations? Will medical, technical, and institutional staff become available to handle the enlarged program? What are the probable shifts in the proportions of private, semiprivate, and ward utilization? Does the change imply enlargement of the attending medical staff? If so, will the physicians merely transfer patients from other institutions? If the new program involves education or research activities, how will they affect staff privileges and the use of beds and treatment and diagnostic facilities?

The facts that provide answers to the foregoing questions are more difficult to obtain than statistics of patients, days, visits, procedures, and diagnoses. But much can be learned and predicted by an analysis of medical staff activity over a period of years. Significant data include: number and type of staff appointments held by physicians at various hospitals; number of inpatients admitted or served by each physician, classified by length of stay, type of

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accommodation occupied, pay status, and place of residence. Important also is the amount of time spent by each staff physician in the care of ambulatory patients, on the education program for doctors, nurses, and technicians, as well as the extent and character of his clinical, laboratory, or library research.

Measurement of effective use involves estimates of cost of construction and service. Hospital people often describe programs in terms of "investment per bed." Figures of $20,000 per bed are mentioned without apology, although a contributor may be impressed by the fact that his six-room suburban residence has just cost him a similar amount. Why, he may ask, does it require $20,000 worth of plant and equipment to serve him when he is hospitalized? One answer is, of course, that hospitals include much more than sleeping accommodations, which may occupy less than one-fourth of the hospital's total floor space. More significant is the cost of diagnostic and treatment apparatus for bed patients, as well as those who are up and about.

There is need to replace the term "investment per bed" with some expression more descriptive of the present functions of hospital plant and equipment. The investment might more properly be related to the total volume of service which will be performed during a year or the life of the institution. A 200-bed hospital may involve $4,000,000 capital investment (or more). Each year such a hospital would serve about 6,000 inpatients. It will probably admit 250,000 inpatients during 40 years of service to the community. These data yield an average of $16 investment per inpatient admission. The hospital will also serve many ambulatory patients, conduct educational programs, contribute to medical knowledge, as well as promote public health and education.

Bed occupancy data should be supplemented by more significant measures of hospital utilization. The Hospital Council of Philadelphia for the past seven years has calculated the average number of admissions per bed per year for each hospital. Statistics cannot replace sound judgment in appraisal of medical care, but history is a good foundation for prophecy. What a hospital has already accomplished indicates the direction and tempo of its future growth.

3. Physical depreciation or obsolescence of existing plant and equipment—Judgments on this subject involve engineering, medical, and administrative opinion. Nonfire-resistant facilities may endanger the lives or health of patients, employees, staff, or visitors. Improper design and layout may interfere with effective use of personnel and supplies, but these facts do not justify an irresponsible attitude toward the abandonment of present plant and equipment.

Prudence requires careful study of the costs and values of renovating or remodeling existing facilities. A renovated facility will normally have a shorter useful life than a new building or set of buildings. But a $100,000 expenditure may extend the useful life of a wing or building for 10 years. In contrast, complete replacement might entail $1,000,000 of investment. These are amounts of a different order of magnitude. Careful consideration should be given to alternative uses for the additional $900,000.

A structure that is unsatisfactory for one purpose might serve reasonably well for another. Patient pavilions have been transformed to employee residences, classrooms, outpatient services, or offices for private medical practitioners. In Philadelphia, recently, a large general hospital, composed of buildings erected from 30 to 80 years ago, was purchased in its entirety by the Commonwealth for care of tuberculosis patients. The layout had become

unsuitable for modern medical care of acutely ill patients. But the buildings will "last" another 50 years following various fireproofing procedures without basic structural changes.

It may be argued that all medical care in hospitals should be provided in modern buildings which reflect the most recent knowledge and skill in engineering and architecture. Obsolescence is a relative term, and must be used with respect to a program of professional service. Even the expression "fire-resistant" has been defined by safety and fire prevention agencies in terms of alternative services of an institution.

4. Relation to programs of other hospitals in the area—A hospital may serve the public best by supplementing rather than duplicating the program of another institution. Some hospitals have learned about other programs "the hard way." One institution approached a national concern for a contribution, using the argument that the firm had previously contributed to expansion of bed capacity at another hospital. The officers of the business were unimpressed because they had already relieved a shortage and saw no reason to encourage overbuilding. In another instance, a large enterprise had helped to finance an entirely new hospital near its new factory "across the river." When solicited by trustees of an existing hospital, representatives of the firm took the position that pressure had already been relieved from center-city institutions.

There is a tendency for each institution in a multiple-hospital area to feel completely responsible for all service to an expanding community. A recent survey of a six-hospital city, revealed 900 available beds for a territory of 250,000 persons, with expected growth to 350,000 in 10 years. These institutions had drafted independent plans to build 600 more "beds." In addition, two new hospitals were under construction to provide 450 more beds in the "outlying" territory. When these facts were known, the trustees of one hospital shifted their plans to improvement of their present professional program without expansion of bed facilities.

Another example of the importance of knowledge of plans appeared in the projected expansion of a small special (orthopedic) hospital. Each of the community's voluntary general hospitals maintained an active orthopedic service similar in size and character to that in the special hospital. Moreover, each general hospital enjoyed the economic advantage of sharing overhead costs with other departments. As a result of the information made available, the trustees of the "special" hospital decided to consider merger or consolidation with one of the large general hospitals in the area.

Coordination is human as well as ideological. Some hospital people sincerely believe that survival is more important than economy or effective utilization. However, as a matter of history, more hospital programs have been saved through joint action and planning than by professional and financial competition.

5. Prospects for financing current expenses which may result from the new capital expenditures—Additional capital investment may "pay its way" by decreased payroll expenses or by improving quality of service, but ordinarily expanded facilities require additional income from patients, taxpayers, or voluntary contributors. Financial plans should include estimates of the effects of the new program on number of inpatients and outpatients, proportions of pay and "free" services, prospects of community and governmental support, and possibilities that additions to the attending staff will be necessary. Any well managed institution can expand its program of free service, if there need be no thought of finances.

But "free" service to the patient is someone's financial responsibility.

One community hospital contemplated an enlarged physical medicine and rehabilitation program, to be financed by annual voluntary contributions. A preliminary investigation showed that several other organizations expected to continue their "piecemeal" free services to special categories of crippled and disabled persons. Conferences resulted in a plan of coordination of rehabilitation services, expenses, and financial support. The hospital provided physical and occupational therapy, with a program of evaluation and prognosis. Other agencies offered vocational counseling, special education, sheltered employment, and placement in industry. The result was a stable financial program for complete rehabilitation services.

A voluntary hospital has an obligation to arrange full-cost reimbursement for public welfare cases, particularly if there is no established fund which will yield endowment income or no approved plan of annual community giving to avoid the need of tax support. Conversely, a local government hospital should make clear how much of the operating expenses will be met from new taxes and what portion will be collected from individual patients and contractual payments by third-party agencies.

Civic agencies, such as community chests, hospital or welfare councils, departments of health, and chambers of commerce, face a challenge and opportunity to appraise the total costs of hospitalized illness and to develop support which will maintain standards and achieve equitable distribution of service among the population.

The cost of "free" service to patients has often been improperly described as a "deficit" in hospital operations, when in fact, the cost of free service in a well managed hospital is merely the value of care provided on behalf of the general public, for which the people should expect to pay. A hospital is a professional institution, not a bank or financial agency. The public which desires hospital care should both demand a fair estimate, and accept responsibility for, the income necessary to finance an expanded program. It is unfair to permit enthusiastic trustees or physicians to expand a hospital beyond its capacity to develop adequate current support. Perhaps the time has come for the federal government to provide less money for new construction and more for costs of operating community hospitals. A change in emphasis would have a desirable effect on the quality and distribution of medical care in hospitals.

6. Recognition of modern trends in medical practice—The main purpose of a hospital is good medical care. High quality medical service has been provided in outmoded plant and equipment, and vice versa. It is more important for a community to obtain efficient professional service than to enjoy the convenience of modern architecture. Some of the trends in medical practice which affect hospital construction are: early ambulation for bed patients; expansion of ambulatory service; growth of physical medicine; housing the chronically ill; and service to the homebound.

Early ambulation has concentrated diagnosis and treatment into shorter periods. It has also affected the way patients and personnel spend their time. Many inpatients occupy bedrooms (not to mention their "beds") for relatively small portions of each day. Much of the time they are in libraries, sunporches, or the various departments for diagnosis and treatment. The bedroom portion of a hospital has tended to become a "dormitory," although few institutions have permitted patients to share a dining room at mealtime. Rooms

arranged to serve horizontal patients for long periods are not necessarily suitable for short-stay patients who are up and about most of the time.

Physicians refer many private ambulatory patients to hospitals for laboratory tests and diagnostic work-ups. These private vertical patients should be received in adequate waiting rooms on an appointment basis, and the doctors should be provided with suitable space for consultations. This trend is a convenience to private physicians. It also permits effective use of the diagnostic and treatment facilities.

Ambulatory care at hospitals is more than a convenient device for handling emergencies in off-hours, and for reducing the overhead costs of a physician's service to nonpaying patients. It often provides prompt treatment which makes it possible to avoid inpatient hospitalization. Professional attitude toward institutional care has run the full cycle. A generation ago the slogan was: Get patients into hospitals. In recent years the motto has become: Get them out of hospitals. The ultimate objective is: Keep them out of hospitals.

The proper housing of long-stay patients in general hospitals deserves more consideration. Such cases are few in number and seldom require intensive service. But they account for a high percentage of patient days. Long-stay patients may be grouped in special portions of the hospital for custodial care. Hospitals often view with concern the occupancy of beds by patients no longer in need of intensive professional service.

Some prolonged illnesses, involving a severe physical handicap or disability, can be "upgraded" by physical medicine with a reduction in their hospital stay or an increase in the self-help. In the long run, even the active rehabilitation procedures reduce the medical needs and financial cost of institutional care.

Rehabilitation personnel and facilities are properly to be located in general hospitals, in order to assure contact with consultants in all medical specialties. There is a tendency for physical medicine departments to be assigned "left-over" space, made available through adaptations of heating facilities from coal to other fuel. New professional departments should be given equal consideration in renovation and new construction.

In passing, it may be mentioned that most new activities in hospitals were started in cast-off facilities. It is still common to find radiology and pathology departments in basements or far corners, not to mention the makeshift quarters for metabolism tests and cardiography. This "old-clothes-to-Sam" practice may continue for some time. The important thing is to recognize current practices in medical care and to plan capital expenditures in accord with observable trends.

Promise for effective use of capital investment is found in home care. The medical staff is assisted by visiting nurses and subordinate personnel or family members, without the expense of maintaining a bed in a general hospital. Consultants may be called to the bedside at home, or the patient may be transported to the hospital for special examination or treatment. Home care is a special form of hospital service, patients being merely further from the center of the hospital building. It exemplifies the fact that a hospital is "people at work," under the same supervision but not under the same roof. It carries to its logical conclusion the fact that the distinctive character of a hospital is medical service, not custodial care.

A hospital's staff, trustees, and management have an obligation and privilege to maximize the utilization of personnel and equipment by all possible means, including that of breaking with traditional practices. A patient sick at

home is still in need of medical care which may exceed the knowledge, skill, and amount of time which an individual general practitioner can furnish. He can be a hospital patient medically, without the need of institutional care between professional visits.

Population data, patient days, and highway mileage are insufficient evidence to justify establishment of a new hospital, or even the expansion of facilities at an existing institution. More important considerations are: Will the professional care be of high standard? Will the facilities and personnel be utilized to a reasonable degree? Is the community prepared to finance the care which it expects to receive in the new or expanded institution? If the answer is "yes" to each of these questions, the trustees and attending staff of a hospital are justified in pressing their claims for capital expenditures upon their community.

Priority Standards

Though expansion of total bed facilities is not always the most pressing need of a community, capital replacement and expansion are inevitably required by the growth of population, the passage of time, progress in medical knowledge and skill, and new demands upon institutions to serve as centers for medical service, research, and education. The following priority standards are offered as a guide. It is assumed that "true medical need" might often exceed the active economic demand and also that available funds are "limited." The sequence indicates the order of priority in capital expenditures. The basic consideration in these priorities is effective utilization of personnel and facilities. The viewpoint is that of the community.

Capital expenditures to achieve coordination among hospitals—Medical opinion is unanimous that a small hospital cannot provide a high standard of general medical service with a reasonable expenditure of time, energy, and money. A metropolitan area hospital should have at least 200 available beds if it is to furnish the major forms of diagnostic and treatment equipment, and diagnostic facilities must be used by vertical as well as horizontal patients if the hospital is to justify the employment of qualified technical personnel. Small cities and rural areas may be served by smaller hospitals, but in such cases it becomes even more important for the professional personnel and equipment to be available for the entire population, not merely those who require bed care.

The burden is upon a small hospital to prove that it will become large enough to provide complete care with reasonable economy. Plans by hospital trustees and staffs to coordinate their programs, even through informal agreements, should be encouraged. Examples may be joint housing of nursing school students, rental agreements for use of laundries or power plants, contractual arrangements for professional access to diagnostic equipment, joint purchasing agreements for staple supplies, area-wide blood banks, development of central "premature" nurseries, interchange of personnel and respirators during polio epidemics, and joint use of rehabilitation centers for education and training.

Capital expenditures to increase utilization within hospitals—One example is the transformation of wards into semiprivate accommodations to achieve greater flexibility in the use of beds. Another is the provision of additional diagnostic and treatment facilities, particularly for ambulatory patients. Still another is the initiation of rehabilitation services for the disabled and chronically ill, ultimately reducing the community's demands for inpatient care.

Additional examples of capital investment that would coordinate the professional personnel and use of the publicly owned facilities are: physicians' office buildings sponsored or owned by hospitals and adjacent to them, although ultimately they should be self-supporting; training programs (in so far as they involve investment) for submedical, technical, and institutional personnel; experimentation with extramural services, such as home care programs for the chronically ill and housing of such public health services as may suitably be located in a hospital building.

Capital investment to prolong the useful life of plant and equipment—Many items of plant and equipment can be continued in public service by skillful renovation or remodeling. This does not imply approval of a penny-wise, patch-up policy which will reduce standards of care or will merely conceal an actual need for replacement. However, renovation or remodeling may often extend the useful life of a building for a substantial period of time. It may improve the quality of medical care without a corresponding increase in operating costs. It may release valuable space for more important professional or institutional services, in the same hospital, in another hospital, or in a related area of public need.

Capital investment to increase bed facilities—Only when a community's needs cannot be served by coordination, renovation, remodeling, or replacement of existing facilities, should construction of a new hospital or the expansion of bed capacity be undertaken. This conservative statement may disappoint civic leaders or medical practitioners who have regarded the provision of more bed facilities as desirable under all circumstances, particularly in small towns or rural communities. A hospital is more than buildings and equipment. A hospital is an aggregate of professional persons in action. Unless their services are of high quality, and are utilized fully, a new or expanded hospital may give a community a false sense of security in its search for adequate medical care.

Conclusion

Hospital capital has always been provided by the general public, without expectation of repayment or earnings on the investment, and there is no prospect of change in this situation. Private donors, particularly business firms or foundations, tend to regard hospitals as instruments of public service rather than memorials to worthy citizens. Hospital sponsors must prove that the public's investment will be effectively utilized.

The capital invested in a hospital is not available for other forms of public service, such as a school, playground, or religious edifice. It cannot be recalled for some other important use. The character and degree of the need should be established before capital investment is authorized.

A hospital building commits future generations to finance the care received at the institution. A hospital's service program and financial requirements are not predictable beyond the most general limits, but capital investment affects professional policy for three or four decades. An error in employment of personnel can be promptly adjusted, but an unnecessary building cannot lightly be dismissed.

Some residual value may lie in the possibility of overexpansion of general hospitals. Their capital campaigns are usually more successful than drives for facilities for mental illness, tuberculosis, rehabilitation, and care of the infirm aged. Entire "general" hospitals may become available for other aspects of health care.

Influence of Birth Weight, Sex, and Plurality on Neonatal Loss in the United States

SAM SHAPIRO, F.A.P.H.A.

Over the years an impressive body of literature has revealed the strong influence exercised by birth weight on the newborn's survival. In the main, the findings have been related to single communities or hospitals and have been directed toward mortality experience among the prematurely born. This report extends the information to offer help to programs inaugurated to reduce all losses in early infancy.

The data used in this study are based on the information reported on the 840,000 birth records for infants born during January, February, and March, 1950, throughout the country,* and on the death certificates for the members of the group who died within four weeks after birth. To consolidate the statistics appearing on both sets of forms, death records were matched against birth records.

No entirely new variables are considered—only some of the well established ones, e.g., birth weight, race, plurality, and sex—and period of gestation, about which perhaps too little has been said. However, in a number of respects the material presented here is relatively new, as it describes the situation existing in the country as a whole rather than in a selected area or institution. Then, again, the statistical sights in the report are raised beyond the group of prematurely born infants and birth weight gradations are introduced in the "mature" weights, over 2,500 gm., with interesting results.†

Because of the relatively large cohort of births involved, it is possible to consider the relationship between plurality, race, sex, and mortality during the neonatal period, taking into account a wide range of birth weights. Age at death statistics are introduced briefly to pursue a line of thought rather than to provide a comprehensive set of basic data.

The report continues the tradition of other investigations into mortality among the newborn by placing primary emphasis on the birth weight characteristic for differentiating levels of fetal development. In mass statistical operations, birth weight is still unquestionably a more objective and reliable measure for this purpose than gestation age which is also reported on the vital record. Poor as the gestation age data are, it would appear, however, that they can be used to throw some light on differentials delineated by the birth weight variable. They are introduced in the report as an auxiliary source of information to help sharpen a number of the issues and possibly to suggest courses of research that cannot be followed

* As indicated in the "Technical Notes," the data actually refer to the United States, excluding Massachusetts. The birth records in this state do not contain the items of birth weight and period of gestation.

† Births in the weight group "2,500 gm., or less," are classified as immature (premature) according to the definition recommended by the American Academy of Pediatrics in 1935 and adopted by the Sixth Revision of the International List of Diseases, Injuries, and Causes of Death (1948). The latter stated further that "if weight is not specified, a live-born infant with a period of gestation of less than 37 weeks may be considered as the equivalent of an immature infant for purposes of classification."

Table 1—Birth Weight Distribution by Race, Sex and Plurality: United States, January-March, 1950

(Birth weight "not stated" distributed. Data for Massachusetts, which does not collect information on birth weight, excluded.)

Birth Weight (in Grams)	Percentage Distribution						
	Total	White	Nonwhite	Single	Plural	Male	Female
Total Live Births	837,786	717,133	120,653	820,618	17,168	429,506	408,280
1,000 or less	0.5	0.4	0.6	0.4	4.0	0.5	0.5
1,001–1,500	0.6	0.6	0.8	0.5	5.6	0.6	0.6
1,501–2,000	1.4	1.3	1.8	1.1	14.2	1.3	1.4
2,001–2,500	4.9	4.7	6.4	4.4	29.2	4.3	5.6
2,501–3,000	18.1	17.7	20.6	17.9	29.5	15.4	21.0
3,001–3,500	37.7	38.1	35.1	38.2	14.1	36.1	39.4
3,501–4,000	27.1	27.7	23.5	27.6	2.8	29.8	24.2
4,001–4,500	7.7	7.8	7.3	7.8	0.6	9.5	5.8
4,501 or more	2.1	1.8	3.8	2.1	0.1	2.6	1.5

through the exclusive use of the vital record.

Weight at Birth

The annual series of official vital statistics have made it clear for a long time that large differences exist between the races and between the sexes in the mortality risk during early infancy, with the white and female births having a decided advantage over the nonwhite and male groups, respectively. To this can be added the well known fact that mortality is considerably higher among the plural births than among the single. The comparative status of these groups is the resultant of differences in weight distribution at birth and differences in mortality experience over the entire range of weights.

Data appearing in Table 1 and Figure 1 tell the weight distribution story. Briefly, the highlights are:

1. A great majority of the births, 82.9 per cent, occurred at weights 2,501–4,000 gm., with about a third falling in the 500 gm. interval, 3,001–3,500 gm. Babies weighing 2,500 gm., or less, represented only 7.4 per cent of the total births, and two-thirds of this group were found at weights 2,001–2,500 gm. The numbers of births diminished with each successively lower weight group and the delivery of a live-born child weighing 1,000 gm., or less, was a relatively rare occurrence. At the other end of the weight scale there was also a rapid decline in the frequency of births. Only 2.1 per cent weighed over 4,500 gm., and it seems likely that the birth of a child over 5,000 gm. is almost as unusual as the birth of an infant of 1,000 gm., or less.

2. Average (median) weights at birth for white and nonwhite births differed only slightly, but the weight distributions for the two race groups varied in a number of crucial respects. Most important are the appreciably higher proportions of nonwhite births found at

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Figure 1

BIRTH WEIGHT DISTRIBUTIONS
UNITED STATES, JANUARY-MARCH 1950

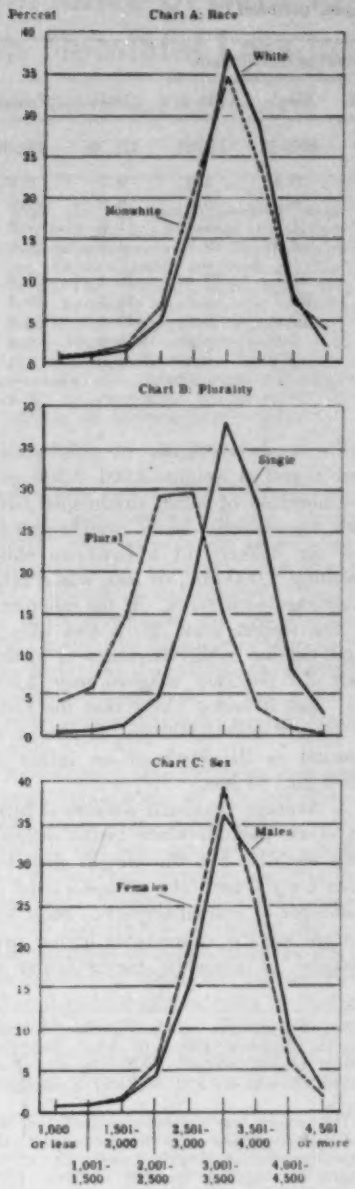
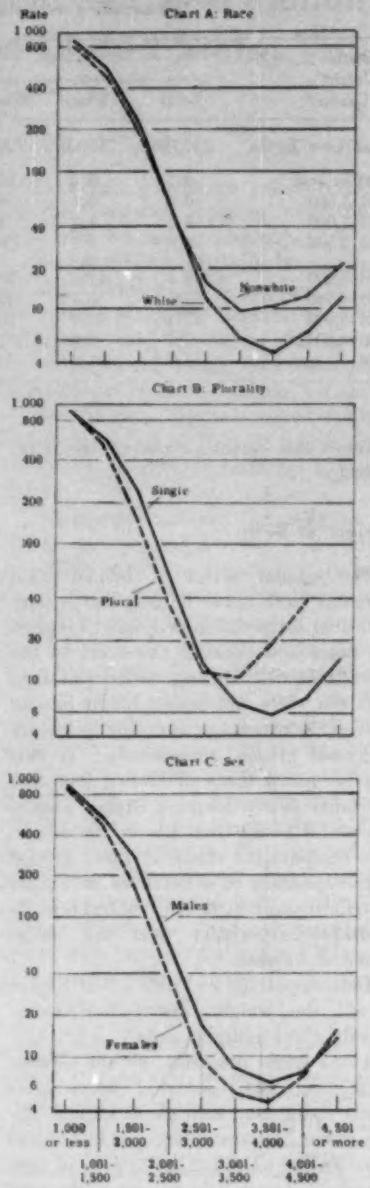


Figure 2

NEONATAL MORTALITY RATES BY BIRTH WEIGHT: UNITED STATES, JAN.-MAR. 1950



both ends of the weight distribution where the major problems of obstetric and pediatric care are concentrated. Among nonwhite births, 9.7 per cent were born weighing 2,500 gm., or less, and 3.8 per cent were over 4,500 gm. In the white group, the comparable figures were 7.0 per cent and 2.1 per cent.

3. Individual members of plural sets had a completely different weight distribution at birth than did single births, weighing on the average about 870 gm., or almost two pounds less. Slightly over half of the plural births were 2,500 gm., or less, and not quite a fifth were over 3,000 gm.* A closer look at the data indicates that almost a tenth were in the very high risk group of 1,500 gm., or less. The distribution among single births was, of course, much nearer the situation among total births.

As a result of the heavy concentration of plural births in the lower weight groups, close to 15 per cent of all the infants 2,500 gm., or less, at birth came from this group, even though only 2 per cent of the 840,000 births in the study were members of plural sets.

4. Males generally weighed more than females at birth in both race groups. There was very little difference in the weight distributions for the two sexes until the 2,001–2,500 gm. interval was reached, where the distribution for female births turned up more sharply than for male. The modal weight group in both sexes was 3,001–3,500 gm. However, the distributions in the immediate vicinity of this weight interval differed considerably with a much higher proportion of births in the male group falling to the right of the interval than was the case for female births.

Of major significance in the interpretation of the statistics is the often considered question whether the variations between weight distributions reflect inherent differences in fetal development or are due to uterine or extrauterine environmental influences. Certainly, in the case of the marked dissimilarity between single and plural births, the physical limitation of the mother is a decisive factor. As it is, the combined weight of births in a plural set is undoubtedly much higher on the average than the weight of single births. Under the broad assumption that members of a multiple set weighed within 500 gm. of each other, the combined weight in about half of the cases in the study would be in excess of 5,000 gm.

An expression of the limitation imposed by plurality on fetal development, i.e., as measured by weight, can be found in the fairly crude gestation age data that are available. For example, the average weight of infants in multiple births at the gestation age interval "37 weeks, or more," was 2,640 gm., as compared with 3,360 for single births. Differences of this type are found at earlier gestation ages, but are on a somewhat smaller scale.

The reason and meaning of the variation between the sexes in weight at birth are not as straightforward. Differences in socioeconomic status, birth order, age of mother, and prenatal care can have little, if any, part in the matter. The influence of whatever factors are operating is probably felt at least as far back as the second trimester of pregnancy. This is suggested by the small but consistent differences in average weight in favor of male births (all races) given in Table 2. Intensive inquiry on this point would require distributions of weight by gestation age, based on more accurate data than are now available.

As indicated in many previous investigations, socioeconomic and other demographic factors probably play important roles in the race differentials. The effect of birth order and age of mother will be investigated at a future

* The term "plural births" throughout this report refers to the individual members of sets of twins and triplets.

Table 2—Median Birth Weights of Live Births at Selected Gestation Ages by Race, Sex, and Plurality: United States, January-March, 1950

(Birth weight and gestation age "not stated" distributed. Data for Massachusetts, which does not collect information on birth weight or gestation age, excluded. Median birth weights rounded to the nearest 10 gm.)

Gestation Ages	Total	White	Nonwhite	Single	Plural	Male	Female
Total *	3,320	3,330	3,280	3,330	2,460	3,390	3,260
Under 28 weeks	920	900	970	930	820	940	890
28–31 weeks	1,700	1,700	1,700	1,740	1,430	1,720	1,680
32–35 weeks	2,310	2,320	2,280	2,360	1,960	2,340	2,290
37 weeks or more	3,350	3,360	3,300	3,360	2,640	3,410	3,280

* Includes "36 weeks" gestation age, although this group is not shown separately.

time. However, data for other variables which may be more directly related to the issue are not available for the births in this series of studies. With respect to the gestation age information reported here, it will be noted that the race differences in birth weights do not follow a consistent pattern over the range of gestation groups in Table 2. The higher average weight for nonwhite births in the under 28-weeks group is in contrast to the situation at 32 weeks and above. Reporting errors and fetal loss differentials may have an important bearing on this reversal.

Mortality

The preceding issues become more real when related to the neonatal loss at specific birth weights. Table 3 and Figure 2 summarize the experience of

Table 3—Neonatal Mortality Rates by Birth Weight, Race, Sex, and Plurality: United States, January-March, 1950

(Rates per 1,000 live births. Birth weight "not stated" distributed. Data for Massachusetts, which does not collect information on birth weight, excluded.)

Birth Weight (in Grams)	Total	White	Nonwhite	Single	Plural	Male	Female
All Weights	20.0	18.9	26.7	18.3	98.6	22.7	17.1
1,000 or less	871.7	883.3	821.4	871.7	871.5	894.2	848.0
1,001–1,500	551.3	562.1	507.0	562.3	503.7	621.8	478.2
1,501–2,000	211.0	214.6	195.7	228.9	145.4	265.0	160.5
2,001–2,500	50.4	50.6	49.5	52.8	32.9	67.4	36.6
2,501–3,000	12.6	12.0	15.4	12.6	11.3	16.6	9.5
3,001–3,500	6.7	6.2	9.7	6.7	10.4	8.1	5.3
3,501–4,000	5.6	4.9	10.5	5.6	18.7*	6.4	4.6
4,001–4,500	7.5	6.7	12.5	7.4	38.1*	7.7	7.2
4,501 or more	14.2	12.0	20.2	14.2	..	13.7	15.1
2,500 or less	173.7	175.8	164.7	173.4	175.6	213.9	138.9
2,501 or more	7.8	7.1	11.9	7.7	11.8	9.1	6.4

* Based on less than 20 deaths.

Table 4—Mortality Rates by Birth Weight, Race, and Sex; at Specified Ages Under 28 Days: United States, January-March, 1950

(Rates per 1,000 infants alive at beginning of each age interval shown. Birth weight "not stated" distributed. Data for Massachusetts, which does not collect information on birth weight, excluded. Single and plural births are combined.)

Age at Death	All Weights *	1,001–1,500 gm.	1,501–2,000 gm.	2,001–2,500 gm.	2,501–3,000 gm.	3,001–4,500 gm.	4,501 gm. or more	2,500 gm. or less	2,501 gm. or more
All Races									
Under 1 day	9.7	304.7	99.1	19.0	4.2	2.2	4.9	97.9	2.7
1 day	3.0	127.9	43.4	8.8	1.8	0.9	2.6	29.2	1.1
2 days	2.0	72.1	28.8	6.7	1.5	0.7	1.3	18.2	0.9
3–6 days	2.6	109.1	27.5	8.3	2.2	1.1	2.2	21.0	1.4
7–13 days	1.4	67.5	17.8	4.0	1.2	0.7	1.9	10.3	0.8
14–27 days	1.5	40.0	13.1	4.6	1.7	0.9	1.3	8.1	1.0
White									
Under 1 day	9.3	314.3	103.6	19.1	4.1	2.1	3.6	100.3	2.5
1 day	2.9	133.0	45.8	9.5	1.8	0.8	2.1	30.4	1.0
2 days	2.0	74.2	31.8	7.4	1.6	0.6	1.3†	19.3	0.8
3–6 days	2.4	118.5	26.2	7.9	2.1	1.0	1.9	20.6	1.2
7–13 days	1.2	65.2	16.0	3.7	1.0	0.6	1.8	9.6	0.7
14–27 days	1.3	34.6	10.3	4.1	1.6	0.8	1.5†	6.9	0.9
Nonwhite									
Under 1 day	11.9	265.5	80.2	18.8	4.8	3.2	8.7	87.8	3.8
1 day	3.6	108.7	33.4	6.0	1.8	1.4	3.9†	24.2	1.6
2 days	2.3	64.0	17.0	3.7	1.4	1.2	1.5†	13.6	1.2
3–6 days	4.0	74.9	32.5	10.2	3.1	1.9	3.1†	23.0	2.2
7–13 days	2.4	75.7	24.9	5.1	2.0	1.2	2.2†	13.3	1.4
14–27 days	2.7	59.0	24.5	6.7	2.4	1.5	0.9†	13.1	1.7
Male									
Under 1 day	10.9	354.2	125.4	25.8	5.3	2.5	4.3	122.1	3.0
1 day	3.5	156.9	57.2	12.8	2.7	1.0	2.6	37.4	1.3
2 days	2.3	91.6	37.3	9.7	2.1	0.8	1.3†	23.6	1.1
3–6 days	3.0	137.6	37.6	10.9	2.9	1.3	2.2	26.9	1.6
7–13 days	1.5	77.1	21.9	4.2	1.5	0.7	2.0	11.6	0.9
14–27 days	1.7	39.3	16.5	5.9	2.2	1.0	1.3†	9.5	1.2
Female									
Under 1 day	8.3	253.3	74.6	13.6	3.3	1.9	6.1	77.1	2.3
1 day	2.5	102.0	31.2	5.7	1.1	0.7	2.6†	22.4	0.8
2 days	1.7	55.6	21.6	4.3	1.1	0.6	1.3†	13.8	0.7
3–6 days	2.2	86.1	19.0	6.2	1.7	0.9	2.2†	16.3	1.1
7–13 days	1.3	60.2	14.4	3.8	1.0	0.6	1.7†	9.3	0.7
14–27 days	1.3	40.5	10.2	3.5	1.3	0.7	1.3†	7.0	0.8

* Rates for 1,000 gm., or less, not shown separately. Two-thirds of these infants died in the first day after birth.
† Based on less than 20 deaths.

the infants in this study and indicate how rapidly the mortality rate is changing between weight groups. Also, the larger the gap between curves, the greater the relative difference in the mortality experience.

Considering what is known from general mortality statistics, it is not at all surprising to find that about two-thirds of the infants who died during the first four weeks after birth weighed 2,500 gm., or less.* Starting from the very

* Of the 16,741 infants who died, 10,706 were in this weight category.

high loss of seven out of eight live births 1,000 gm., or less, the neonatal mortality rate declined rapidly with additional weight to reach a low point among babies weighing 3,501–4,000 gm. (5.6 per 1,000 births). The modal weight group, 3,001–3,500 gm., was a close second. Appreciable increases in weight which brought the baby beyond 4,000 gm. at birth were a definite liability and above 4,500 gm. the rate was almost three times the low figure.

No sharp dividing point could be drawn between "immature" and "mature" from the data. The impression gained from statistical series that group together all weights above 2,500 gm. is that the drop in mortality after this point is far greater than the changes from one weight to the next among the prematurely born infants. However, subdivision of the data into 500 gm. intervals indicates clearly that a more orderly situation exists. Similar relative declines in the rate (about 75 per cent in 500 gm.) occur in the weight group just above 2,500 gm. and in the group just below. In part, this similarity reflects, of course, the special care extended by many hospitals to "immature" infants. Parenthetically, it might be noted that the rate of decline at these weights was the greatest over the entire 500 gm. weight range in both race groups and both sexes.

The mortality risk was most acute during the first day after birth regardless of the infant's weight (Table 4). With each additional day the loss in successive groups of survivors declined sharply. Ability to survive the hazardous first day was closely related to the infant's weight, but the advantage that went with additional weight at birth (until reaching the higher weights) was also felt long afterward. In the third and fourth weeks after birth a considerable margin still separated the mortality rates for adjacent birth weight groups, although in most instances the percentage difference was not as large as earlier. Another interesting feature of the data is that throughout the neonatal period, mortality was greater among the heavy babies, i.e., those over 4,500 gm., than in the group weighing 3,001–4,500 gm. The more difficult situations faced by the obstetrician in delivering large babies apparently had their counterpart in pediatric problems posed by the group.

Race—The substantial difference in the over-all neonatal mortality rates for white and nonwhite births (18.9 and 26.7, respectively) was due to far greater mortality among nonwhite infants weighing over 2,500 gm. and to the larger proportions of nonwhite births at the poor risk weights. The heavy contribution made by the latter factor can be seen from the neonatal mortality rates standardized for weight. These were 19.6 for the white group and 22.6 for the nonwhite.

At 2,000 gm., or less, the risk of loss was appreciably lower among nonwhite than white births. Although the data in Table 3 show that there was practically no difference between the two races in the next higher 500 gm. weight group (2,001–2,500 gm.), the following rates

Birth Weight	White	Nonwhite
1,001–1,250	668.1	614.4
1,251–1,500	489.5	430.9
1,501–1,750	315.4	203.1
1,751–2,000	191.6	125.5
2,001–2,250	84.2	67.4
2,251–2,500	36.0	32.4
2,501–2,750	16.6	13.8
2,751–3,000	8.3	9.5

indicate that among single births in hospitals the nonwhite definitely had a lower mortality here, too.* Also, the hospital birth data reveal that the survival advantage for the nonwhite group

* Note, these are the only figures in the report for hospital events. They give a later turning point than is indicated by the data for hospital and home births combined, page 1150. Figures for births occurring at home will be presented elsewhere.

did not end at 2,500 gm. Actually, the situation became relatively more favorable for the white births for the first time at 2,751–3,000 gm. This type of statistics may suffer from selectivity, but it is unquestionably more accurate than the figures that combine births in hospitals and at home, particularly for the nonwhite group.

In comparing these statistics with the findings reported in other studies, it should be borne in mind that they represent the composite experience of hospitals with an extremely broad range of services for handling prematurely born infants. Furthermore, the many types of hospitals are probably reflected differentially in the figures for the white and nonwhite births.

Differences of the type just discussed give the impression that white and nonwhite births do not reach the same level of development at the low weights. Equivalence between race groups is apparently also not found in the mortality experience at the gestation ages that follow for single births: *

Gestation Period	White	Nonwhite
Under 28 weeks	793.5	718.3
28–31 weeks	374.3	332.4
32–35 weeks	119.7	108.9
37 weeks or more	7.9	13.1

Returning to Table 3, it will be noted that the optimum rate for white births was considerably lower than for nonwhite. The advantage among nonwhites in the low weight groups resulted from their greater ability to survive the immediate period following parturition and the first few days afterward. With time, the environment factors exerted an increasingly greater influence on chances of survival and the situation changed. By the third and fourth weeks after birth, nonwhite mortality was well above the white.

In the weights above 3,000 gm., white births had a marked advantage over the nonwhite from the very earliest period of life. The advantage generally reached its greatest proportions after the first few days. An exception to this was found above 4,500 gm. Here, the especially difficult problems faced in delivering very large nonwhite babies resulted in an even wider gap (relatively) between the rates in the first day than later in the neonatal period.

Plurality—Deaths among infants that were part of plural sets accounted for 10 per cent of the total neonatal loss. This was almost entirely because of the large concentration of multiple births at the low weights. Although weight was a decisive element in the mortality among these infants, the risk of loss was far below the experience among single births at weights 1,501–2,500 gm. The latter group had a marked advantage above 3,000 gm. The special meaning of "excessive" weight among plural births can be judged from the sharp increase in mortality after 3,500 gm.

Sex—Probably no characteristic has as interesting a set of differences in the mortality experience as sex. The loss among the males was about a third more than among the females during the entire neonatal period. Here the weight distribution was overridden by a more important factor, i.e., a markedly lower mortality rate among the females at almost all weights. In fact, the advantage became slightly greater when the rates were standardized for weight, 16.7 for the females and 23.6 for the males.

Over the broad weight range 1,001–4,000 gm., the rates among baby boys were between 30 and 84 per cent higher than those for girls. It was only above 4,500 gm. that males had a lower rate. It may well be that comparisons at the low weights are artificial in that female infants born at a certain weight may be more fully developed and ready to cope with the rigors of the birth process and

* Data for 36 weeks gestation are omitted because of the special problems discussed in the "Technical Notes."

the extrauterine environment than male babies of the same weight. This would appear to be supported by the following detailed weight data for single births, which indicate that at several points the rate for females was close to the rate for males in the next higher 250 gm. interval. Especially was this true for the white race where the male-female differentials in specific weight groups were generally larger than was the case for the nonwhite.

Birth Weight	White		Nonwhite	
	Male	Female	Male	Female
1,001–1,250	731.7	589.3	648.6	603.4
1,251–1,500	579.4	412.3	464.6	412.0
1,501–1,750	383.0	246.0	252.9	228.0
1,751–2,000	246.0	147.7	206.2	131.5
2,001–2,250	117.1	59.5	104.6	62.0
2,251–2,500	55.8	30.2	50.8	35.1
2,501–2,750	23.8	13.2	25.6	13.4
2,751–3,000	11.6	6.8	15.7	9.7

Not all of the sex differences in mortality can be explained by this method of equating weight groups. In Figure 2C, it will be observed that while the optimum weight level for both sexes was 3,501–4,000 gm., the mortality curves were still relatively far apart at this point. This strongly suggests that differences in development as measured by birth weight are not the entire explanation. Period of gestation also may not be the answer since about as large a percentage difference was found among births at or near full term as in the group occurring several weeks earlier. Mortality rates for single births (all races combined) follow:

Gestation Period	Male	Female
Under 28 weeks	805.0	749.0
28–31 weeks	406.0	319.2
32–35 weeks	137.9	96.7
37 weeks or more	9.9	7.3

That the differences between the sexes in the ability to survive goes beyond maturity at birth, as measured by either weight or gestation age, are indicated by the persistence of the advantage among females long after the hazardous first few days. Mortality differences toward the end of the neonatal period were comparatively large even at such favorable weights as 3,001–4,500 gm.

Fetal Deaths—Although this article is concerned with the mortality among the live-born, a word should be said about late fetal deaths (28 weeks or more gestation). To an increasing degree, it is being recognized that many of the problems posed by this group are similar to those found among early neonatal deaths. The following data for events that occurred in the first quarter of 1950 indicate that race, sex, and plurality differences are in the same direction for both groups. However, the magnitude of these differences is greater among the neonatal deaths for the sex and plurality characteristics. The reverse is true for the race variable.

	Fetal Deaths (28 Weeks or More Gestation) per 1,000 Live Births	Deaths (Under 1 Week) per 1,000 Live Births
Total	15.4	17.2
White	13.6	16.4
Nonwhite	25.9	21.7
Single	14.9	15.7
Plural	39.1	89.1
Male	16.3	19.6
Female	14.5	14.6

These relationships will be examined more intensively at a later date, utilizing weight and gestation age information.

Technical Notes

Source of Data—The data presented in this report are based on information taken from (1) birth certificates for infants born in the first three months of 1950, and (2) death records for the group that died within 28 days after birth.* These two sets of records were matched to interrelate birth and death information for the same infants. Birth certificates were available for all but a small proportion of the deaths (2.4 per cent or 390 cases). This group included some foundlings. A birth record was created for each unmatched death record, utilizing data on the death certificate for certain personal particulars, e.g., race, and sex.

Seasonality—The proportion of children weighing 2,500 gm., or less, in the first three months of 1950 (7.4 per cent) was smaller than for the year as a whole (7.6 per cent). Although the differences between the weight distribution for the two time periods are statistically significant for all major characteristics, they are of a small enough order of magnitude not to disturb the comparisons made.

The neonatal mortality rate for the whole year of 1950 (20.5 per 1,000 live births) was slightly higher than the rate among the births in the study. However, this is in the direction indicated by the difference in weight distribution.

Distribution of "Unknown" Birth Weights and Limitations of Data—About 3 per cent of the birth records for the white and 7 per cent for the nonwhite did not have a statement on birth weight. Among the deaths, these percentages were 13 and 20 for the two race groups, respectively. It was apparent from the distributions of the data that birth weight reporting was less complete for infants born at early gestation ages than at a more advanced stage of pregnancy. To reduce this bias, gestation age information was used to distribute the groups that had no weight statements. This was accomplished by assuming that within each gestation age the "unknown" weights were distributed as the "known."

About 6 per cent of the total neonatal deaths and less than 2 per cent of all the births had no statement on both weight and gestation age. These were distributed proportionately as the known birth weights. Plurality, race, and sex were taken into account in making all of the distributions. Despite the fact that a reasonably sound basis existed for distributing the "unknowns," this group was fairly large and the reader is cautioned not to draw conclusions from relatively small differences. An exception to this would be a series of small differences which were all in the same direction.

Accuracy of Data—There is probably less of an error in the figures for white than nonwhite for reasons other than the "unknown" weight problem. In the latter race, about 45 per cent of the births were delivered at home and mainly by midwives. In the white race, the comparable figure was 8 per cent. Many of the midwives used scales graduated in quarter pound intervals and it is not known how carefully the weighing was done. To reduce the effect of this factor, most of the tabular material presented in this report is in 500 gm. intervals. Sex differentials within each race group should be influenced only slightly by errors of this type.

Although no measure of the problem

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* Massachusetts births and deaths are excluded from the report since birth records in this state do not carry items on birth weight or gestation age. The effect of this exclusion was minor, as shown in the following over-all neonatal mortality rates for January–March, 1950: United States (including Massachusetts)—all races, 19.9; white, 16.8; nonwhite, 26.6. United States (excluding Massachusetts)—all races, 20.0; white, 16.9; nonwhite, 26.7.

is available, it is generally believed that there is slightly greater underreporting of infants who die immediately after birth than in the group that survives. Also, misreporting of some as fetal deaths does occur. Both of these types of errors lead to an understatement of the proportions of the births in the very low weights and of the mortality rates at these weights. This is, undoubtedly, a somewhat more important factor among nonwhite births than among the white and would affect the relationships discussed to some extent.

Classification—In most areas, birth weight was reported in pounds and ounces. The traditional gram groupings, however, are used to tabulate and present the data in order to facilitate comparison with other studies. Equivalents of these groupings in terms of pounds and ounces are as follows:

1,000 gm. or less	=	2 lbs.	3 oz. or less					
1,001–1,250 gm.	=	2 lbs.	4 oz.–2 lbs.	12 oz.				
1,251–1,500 "	=	2 "	13 "	–3 "	4 "			
1,501–1,750 "	=	3 "	5 "	–3 "	13 "			
1,751–2,000 "	=	3 "	14 "	–4 "	6 "			
2,001–2,250 "	=	4 "	7 "	–4 "	15 "			
2,251–2,500 "	=	5 "	0 "	–5 "	8 "			
2,501–2,750 "	=	5 "	9 "	–6 "	1 "			
2,751–3,000 "	=	6 "	2 "	–6 "	9 "			
3,001–3,500 "	=	6 "	10 "	–7 "	11 "			
3,501–4,000 "	=	7 "	12 "	–8 "	13 "			
4,001–4,500 "	=	8 "	14 "	–9 "	14 "			
4,501 gm. or more	=	9 lbs.	15 oz. or more					

The 1950 birth records in all but a few of the states requested gestation age information in the following form: "length of pregnancy—weeks." In practice period of gestation is generally interpreted as referring to the number of completed weeks that have elapsed between the first day of the last menstrual period and the date of birth of the child. At the present time, important inaccuracies are evident in the data. These arise principally from errors or difficulties in computing "length of pregnancy" in weeks and are reflected in the statistics by extreme heaping at 36 and 40 weeks. The problem with "36 weeks" is believed to result from the practice among some attendants of converting nine calendar months (full-term gestation age) into weeks by multiplying by four. Heavy concentrations at 40 weeks are indicative in part of a failure to calculate period of gestation for the newborn infants who seem to be normally developed. This probably has its greatest effect on gestation ages close to term.

Summary

A nation-wide study of births that occurred during the first quarter of 1950 and deaths in the group within 28 days after birth was carried out on the basis of information on vital records. Birth and death records were matched to interrelate data appearing on them.

About 7.4 per cent of the infants weighed 2,500 gm., or less, at birth. Another 2.1 per cent were in the heavy weight group of 4,501 gm., or more. Nonwhite babies generally did not weigh as much as the white, and females weighed less than males. This resulted in larger proportions of the former groups weighing 2,500 gm., or less, than was the case for the white and male groups, respectively. A larger segment of nonwhite births than white was also found at the other end of the weight scale (over 4,500 gm.). Plural births were heavily concentrated in the lower weight groups, and close to 15 per cent of all the infants 2,500 gm., or less, at birth came from this group.

Relatively small increases in birth weight resulted in major reductions in neonatal mortality. The optimum weight was well past the 2,500 gm. upper level of immaturity. Appreciably heavier weights than the optimum were a definite liability and above 4,500 gm. the rate for all races combined was almost three times the low figure (5.6 per 1,000 births weighing 3,501–4,000 gm.).

The mortality risk was greatest during the first day after birth regardless of the infant's weight. Ability to survive this hazardous period was closely related to the infant's weight, but the advantage that went with additional weight at birth (until reaching the higher weights) was also felt at the end of the neonatal period.

At the low weights of 2,000 gm., or less, the risk of loss was substantially lower among the nonwhite than white births. The advantage among nonwhites at these weights resulted from their greater ability to survive the immediate period following parturition and the first few days afterward. In the weights above 3,000 gm., mortality among white births was far less than among the nonwhite from the earliest period of life.

Plural births had a lower neonatal mortality rate than single events at weights 1,501–2,500 gm. However, because of the weight distribution, infants in plural sets accounted for about a tenth of the total neonatal loss.

At almost every weight, mortality among males was higher than among females. There was evidence that in the low weights the mortality experience among females in one 250-gm. interval was close to the loss among males in the next higher weight group. However, not all of the sex differences in mortality could be explained in this way. The gap between the sexes in mortality risk was also relatively large at the optimum weight level and in favor of the female group. Differences between the sexes in the ability to survive persisted after the difficult first few days following birth.

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Current Emphasis in the Cancer Control Program of the American College of Surgeons

WALTER E. BATCHELDER, M.D.

So many physicians, hospitals, and public health services are concerned in one way or another with the cancer problem that this paper setting forth the steps underway to improve cancer studies and diagnostic services should prove of wide interest.

The cancer control program of the American College of Surgeons began with the appointment of a committee by its Board of Regents in January, 1922, called the Committee on the Treatment of Malignant Diseases with Radium and X-ray. The late Dr. Robert B. Greenough of Boston was made chairman of this committee. At the time of this appointment the Board of Regents announced the purpose of the committee to be: "to secure a uniform method of recording, classifying, and reporting cases of cancer in its more important locations so that the collective experience of all the vast amount of material in the country may be utilized, instead of, as at present, obtaining reports from different clinics, prepared under different conditions, analyzed according to different criteria and thus not fairly comparable in any sense of the word."

It soon became evident to the committee that in order to comply with this directive from the Board of Regents it would be necessary to have more uniformity in the clinics treating cancer patients. Therefore, in 1930, recommendations were made to the Board of Regents, by the committee, concerning minimum standards by which cancer clinics should be operated to obtain greater uniformity; and the following statement appeared in the annual report of that year: "The Board of Regents of the American College of Surgeons, on the advice of its Committee on the Treatment of Malignant Diseases, announces its policy of emphasizing the necessity of making the benefits of contemporaneous knowledge of cancer available to each and every cancer patient in the country. This is a most significant step in the improvement of cancer service throughout the country and one which promises more than anything else immediately available to diminish the execessive mortality from this disease." With this announcement in 1930 appeared for the first time the "Minimum Standard for Cancer Clinics in General Hospitals."

This Minimum Standard has not been materially changed during the intervening years and, because of the many newer developments in the field of cancer control, the Committee on Cancer now feels that the time has arrived when we should adjust our ideas to conform with the present-day concept of cancer management.

The committee had been working on the problem of revising the Minimum Standard for nearly two years, and in October, 1953, presented to the Board of Regents its recommendations. The Board of Regents accepted the recommendations and we now have a revision entitled "Minimum Requirements for

Approval of a Cancer Program" which, as of October 9, 1953, replaced the "Minimum Standard" under which we have been operating since 1930.

The requirements are based on the following premises, as adopted by the Board of Regents:

> In order that the cancer program may be uniformly carried out and requirements established by the American College of Surgeons be consistently met, the college requires:
>
> 1. That a Committee on Cancer of the hospital medical staff be appointed as a policy group to plan, supervise, and appraise the cancer program.
>
> 2. That a Cancer Registry be established under the general jurisdiction of the Committee on Cancer for the purpose of recording all cancer cases.
>
> 3. That organized cancer clinical activities, meeting the Minimum Requirements of the college for cancer programs, be established and maintained in conformity with policies set forth by the Committee on Cancer of the hospital.

It should be pointed out that this represents a three-phase activity: organizational or the Committee on Cancer; the statistical aspect or the Cancer Registry; and the clinical aspect or the Cancer Clinical Activities; all contributing to each other yet separate in their purpose and function. It is realized that in many instances the personnel conducting these different aspects will be identical, but it cannot be emphasized too strongly that the function and purpose of each should be clearly understood.

After a general statement each section will be discussed separately.

"The cancer program must be conducted either in and by the staff of a hospital approved by the Joint Commission on Accreditation of Hospitals, or in lieu of this by an organization, the cancer program of which has the formal approval of the local county medical society."

Except in rare instances it has been the policy of the college not to approve a cancer program unless it was operated in a hospital approved by the college. Since the college has turned its hospital standardization program over to the Joint Commission on Accreditation of Hospitals we are now using their approval as our standard in this respect. If the program is being conducted in some place other than an approved hospital it will be necessary to have the approval of the local county medical society. This latter approval is an approval of the idea rather than the professional conduct of the group. In other words, the local county medical society approves the existence of the cancer program in the community.

Section I. "Committee on Cancer" reads: "There shall be a Committee on Cancer of the hospital medical staff consisting of physicians directly concerned with the diagnosis and treatment of cancer that shall be appointed by the appointing authority of the medical staff. The duties of this committee shall be to initiate, supervise and appraise the cancer program and to report to the medical staff at least annually. It shall maintain close liaison with the Tissue Committee."

Experience has shown that a cancer program is much more effective if coordinated and guided by a Committee on Cancer of the medical staff. This is a new requirement and one which the committee believes will do a great deal in the development of better cancer programs.

In order that a greater degree of control over cancer surgery may be

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achieved it is necessary that the Committee on Cancer maintain the closest of liaison with the Tissue Committee of the medical staff. Incidentally, it is a requirement of the Joint Commission on Accreditation of Hospitals that the medical staff have a Tissue Committee as one of its permanent committees.

Section II. "Cancer Registry" reads: "It shall be a requirement (after December 31, 1955) for approval that a properly functioning cancer registry be in operation which records every patient, private and public, inpatient and outpatient, upon whom the diagnosis of cancer is established. This may be the only formal cancer program conducted. Each year a report will be made to the medical staff of the current work of the registry, including five-year end results as they become available through continuing follow-up."

One of the deficiencies we have found in the course of our surveying of cancer programs is the lack of follow-up information. The Committee on Cancer believes that this lack of information is not only detrimental to the welfare of the patient but also to the progress of cancer control. To improve this situation the committee recommended in October, 1952, that a cancer registry be made part of the requirements for approval of cancer programs by the American College of Surgeons. The Board of Regents accepted this recommendation. Therefore, as of December 31, 1955, in order to receive the stamp of approval of the college the hospital must have in operation a properly functioning cancer registry. This time lapse is to give those hospitals not now conducting a registry time to initiate and have in operation by 1955 a properly functioning registry.

For a registry to be of value it is mandatory that an adequate follow-up be maintained. Only then are valid evaluation studies possible, and without such studies progress cannot be made. Many hospitals throughout the country maintain cancer registries and produce valuable reports. It is the belief of the Committee on Cancer that all hospitals treating cancer should also be doing evaluation studies and that such studies should not be limited to the larger hospitals or medical centers. There is a wealth of material throughout the country which is not being utilized in any way and if this material could be studied we would accumulate a great deal of valuable information.

The entire cancer population of the hospital needs to be studied rather than selected units of that population such as the public patients. For this reason it is stated in the requirement that both public and private patients shall be included in the cancer registry. Many patients are treated on an outpatient basis in the Surgical OPD, the X-ray Department, etc., and often escape being included in evaluation studies. To assure their inclusion, the ruling was adopted that all inpatient and outpatient cases are to be included in the registry.

Many hospitals may not wish to participate in a formal cancer clinical activities program, and yet cancer is being treated within their walls. The cancer registry will improve the overall cancer management program of the hospital. This may be the only formal cancer program being conducted by the hospital and the college will, as of December, 1955, inaugurate a listing of hospitals conducting approved cancer registries as the only formal cancer program.

If the information compiled by the cancer registry is not brought to the attention of the entire medical staff, and especially to those treating cancer, the purpose for which the registry was originally established will be lost; therefore, the ruling has been made that an annual report be presented at a meeting of the entire medical staff, this report to include five-year end results

when they become available. It has been suggested by some members of the committee that all those physicians who have treated one or more cancers within the past year be required to attend this meeting and be prepared to justify the management of those cases treated. As one can see there are constantly appearing in these requirements threads of professional education. This is, of course, necessary and highly desirable in our over-all program aimed toward progressive improvement.

We have prepared a manual to assist those hospitals which are about to establish a cancer registry. It is not our intention or desire that every registry be set up according to the exact wording of this manual. We merely submit this information as a guide and example in order that what is expected of a registry will be understood and that ideas for establishing them in individual hospitals could be engendered. There are many acceptable patterns now in operation.

Section III. "Cancer Clinical Activities" reads: "In addition to the requirement of a Cancer Registry the cancer program may offer either: A. Cancer Consultation Service, or B, Cancer Consultation and Treatment Service." A footnote here reads: "Because of the wide variation of operational patterns, descriptive organizational terminology may vary as tradition and local conditions dictate. For example, certain groups may wish to use the terms "Tumor Board," "Neoplastic Clinic," "Cancer Service," "Cancer Clinic," etc.

Each of these two services are broken down into six subsections which merely describe the activities and functions of each. The Cancer Consultation Service is described first.

Subsection 1. Organization: "There shall be a definite organization of the service with representation from the various departments of the hospital concerned with the diagnosis of cancer." This is self-explanatory and needs only the comment that the Committee on Cancer believes the appointments to both these services should be on a permanent basis in order to lend continuity to the program.

Subsection 2. Patients: "Reference to the Cancer Consultation Service of all patients in whom the diagnosis of cancer is to be considered shall be either voluntary or obligatory, preferably obligatory, in at least the case of public cases, in accordance with the recorded vote of the medical staff and the governing board of the hospital."

It would be ideal to have all patients in whom the diagnosis of cancer is to be considered referred to the Cancer Consultation Service; however, because of local customs, or other reasons, some physicians may not wish to refer their private patients. It is strongly urged that all public patients in the hospital, both inpatient and outpatient, be referred to the service. By referring is meant that the patient be there in person, rather than be simply discussed from the clinical record. The patient has already been recorded, or will be very shortly, in the Cancer Registry, and recorded information can be obtained there. Again, to enhance the professional educational program it is highly desirable to have the patient presented in person.

Subsection 3. Equipment: "In addition to the usual diagnostic equipment required in every approved general hospital there shall be such other diagnostic equipment as is necessary for the diagnosis of cancer." This paragraph needs no discussion.

Subsection 4. Clinical Record: "The clinical record shall be a complete chronological account of the cancer patient's course, including laboratory diagnoses, and an autopsy diagnosis when available." The usual abstract form does not suffice for the entire

clinical record. The forms the college developed and the forms that many state health departments have developed, and others, are usually too brief to be of value as a complete clinical record. This is neither fair to the patient nor the attending doctor, and especially subsequent doctors who may be treating the patient. We cannot emphasize too strongly that the records should be as complete as possible and contain all the pertinent information. We do not advocate a verbose clinical record just for the sake of a record, but we do advocate that all the pertinent information be recorded.

Subsection 5. Treatment: "No treatment is offered by the Cancer Consultation Service." The patient is sent back to the referring physician with recommendations as to treatment which he is at liberty to accept or reject as his judgment dictates.

Subsection 6. Clinical Session: "Regularly scheduled clinical sessions shall be held as often as necessary for proper service to the patient, preferably at least weekly." If it is impossible to meet at weekly intervals then some system should be established whereby a patient may be seen by members of the Consultation Service individually in order that valuable time will not be wasted in waiting for the group to convene.

The Cancer Consultation and Treatment Service (B) is identical in every respect to the Cancer Consultant Service with three exceptions, paragraphs (1), (3), and (5).

Paragraph (1) reads: Organization: "There shall be a definite organization of the service with representation from the various departments of the hospital concerned with the diagnosis and treatment of cancer."

Paragraph (3) reads: Equipment: "In addition to the usual diagnostic and therapeutic equipment required in every approved general hospital there shall be such other diagnostic and therapeutic equipment that is necessary for the diagnosis and treatment of cancer."

Paragraph (5) reads: Treatment: "The treatment of cancer patients shall be entrusted to the members of the hospital medical staff except in cases where adequate treatment must be procured elsewhere, in keeping with the collective recommendations of the group." The members of the staff of the Treatment Service may be given the responsibility of treatment or they may delegate this responsibility to other competent members of the hospital staff. It remains the responsibility of the service, however, to make certain that the patient is receiving the best possible treatment available. If the patients are not receiving the treatment as recommended by the group, it is then the responsibility of the staff to exert its influence by all means possible to insure that the patients do receive proper care. This latter is, of course, a problem of professional education.

In summary, the American College of Surgeons announces a new program of cancer control which is outlined in the "Minimum Requirements for Approval of a Cancer Program." This is in keeping with the original purpose of the committee as outlined by the Board of Regents in 1922.

Some Statistical Considerations in the Study of Cancer in Industry

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Although this statistical discussion deals with cancer in industry, the general principles enunciated are applicable equally to other diseases and in any population group.

With the general agreement that there are such things as occupational cancers and that occupational cancer, in some sense, can be controlled, studies of industrial and occupational hazards are not only warranted, but are essential. However, if such studies are to be conducted in a manner to yield usable and useful results, two statistical questions must be answered at the very outset. First, how big a study must we conduct; how many people should be under inquiry; and for how long? Second, how do we get these people for study; where do we locate them; where, and how do we get information about them? This paper will attempt to answer these two questions, plus an obvious third (and nonstatistical) question: After observing a large enough group of people for a sufficiently long period to yield valid results, what recommendations for action can one make?

Determination of Study Size

The question of "how big a study" is important for two reasons. There are scientific requirements to be met, if the results are to be statistically valid, and there is the budgetary problem to be solved. If the scientific requirements call for a large study, with many people followed for a long time, this must be known at the outset, so that sufficient money can be made available to carry it out. If sufficient money is not available to carry out a proper study, then perhaps no study should be undertaken.

From the arithmetic point of view, there are two things that determine the size of a study: How big a difference is it important to find, and how certain do we want to be that we will be correct when we conclude our study and say that a difference does (or does not) exist? By "how big a difference" we mean a difference between a selected "normal" rate and the rate for the particular industry, plant, or operation under suspicion. The age-sex-color specific rates in the general population provide a basis for computing a "normal" rate against which the rate for the plant (let us say) can be compared.

The second part of this question, "How much of a risk of arriving at an incorrect conclusion are we willing to take?", is the key to further work, once we have decided how big a difference (or really small a difference) it is essen-

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tial to find. It is possible to arrive at an incorrect conclusion for either of two reasons: we may conclude that the rate in the plant exceeds that of the general population, when it does not, or the converse.* In conducting our study we want protection against both types of error. If we make the first error, we may lead management into an extensive search for a nonexistent hazard. If we make the second, we will lend an air of assurance and complacency to a dangerous and hazardous situation.

The decision of "how big a difference" and "what degree of protection" against both sorts of error is a substantive decision and must be made by persons who are able to evaluate the costs in money and in lives of the alternative course of action.

Consider a specific example. It is suspected that a respiratory cancer hazard exists in an industrial plant that employs 2,500 persons. One thousand of these are production workers, all males, who are in operations in which they are exposed to the suspected cancerigenic agent. We know that in the general population of males from 15 to 65 years of age the annual incidence of respiratory cancer is about 40 per 100,000.† Economic and medical considerations have led us to decide that if the rate among the 1,000 males is 200 per 100,000, or more, a definite hazard exists.

When we have concluded our study, and if we say that the plant rate is "normal," we want to be (let us say) 95 per cent certain that it really is; i.e., in repeated trials, we would incorrectly conclude that the plant rate is above "normal" 5 per cent of the time. Similarly, if the plant rate actually exceeds the general rate by five times or more, we want 90 per cent assurance that the plant rate is higher than "normal." (The five times the general rate, and the 95 per cent and 90 per cent assurance have been selected here for illustration only.) If other conditions suggest other factors, these must be modified, of course. These are the substantive decisions that must be made at the outset of the study.

We now have sufficient data to compute a "sample size." The results of just such computations are summarized in Table 1.‡ The rate for the general population is 40 per 100,000. Column 3 of Table 1 is concerned with this rate. We want a 90 per cent assurance that we will say "above normal" when the true rate in the plant is five times the general rate. Five times the general rate data are given in column 9. We then read down column 9 until we find a value of 0.90, or more (the second line). Reading back along the second line to column 6 we find the number 6; in column 5 we find the number 2; and in column 3, we find the number 5,000. This means that we will need 5,000 person-years of observation; i.e., we will have to observe the 1,000 production workers for 5 years. At the rate in the general population, 40 per 100,000 per year, we would expect 2 cases of respiratory cancer in 5,000 person-years of observation. If we find 6 or more cases during the 5-year interval of observation, we will conclude that the plant rate is above "normal," and

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* These two errors correspond to the errors of Type I and II introduced by Neyman and Pearson in the theory of testing statistical hypotheses.

† This is an estimate of age-specific incidence, based on the National Cancer Institute series "Cancer Illness in Ten Urban Areas of the United States." In our discussion, this rate serves as a norm, the basis for entering Table 1. However, in a specific investigation, it may be desirable to use a different norm, e.g., rate in the state, rate in the local area, rate in a selected industrial population, or perhaps even a rate using the "unexposed" plant population as a control. This last procedure imposes additional technical problems which require the development of tables not included here.

‡ Table 1 is constructed to provide information on sample size when the general population rates are 10, 20, 40, or 80 per 100,000, and when the degree of assurance desired against falsely saying "above normal" is 95 per cent. Tables, of course, can be constructed for other rates and for other degrees of assurance.

Table 1—Determination of Sample Size

Number of Person-Years Yielding the Expected Number of Cases Given in Column 5, for a Selected Set of Rates: Rate per 100,000 Population				Expected Number of Cases at General Population Rate	Minimum Number of Cases Required to Conclude that Plant Rate Exceeds General Population Rate*	Probability of Concluding that Plant Rate Exceeds General Population Rate When in Fact It Is:		
10	20	40	80			Twice as High	Three Times as High	Five Times as High
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
10,000	5,000	2,500	1,250	1	4	0.14	0.35	0.73
20,000	10,000	5,000	2,500	2	6	0.21	0.55	0.93
30,000	15,000	7,500	3,750	3	7	0.39	0.79	0.99
40,000	20,000	10,000	5,000	4	9	0.41	0.84	†
50,000	25,000	12,500	6,250	5	10	0.54	0.93	†
60,000	30,000	15,000	7,500	6	11	0.65	0.97	†
80,000	40,000	20,000	10,000	8	14	0.73	0.99	†
100,000	50,000	25,000	12,500	10	16	0.84	†	†
120,000	60,000	30,000	15,000	12	19	0.87	†	†
140,000	70,000	35,000	17,500	14	21	0.93	†	†
160,000	80,000	40,000	20,000	16	24	0.94	†	†
180,000	90,000	45,000	22,500	18	26	0.97	†	†
200,000	100,000	50,000	25,000	20	29	0.97	†	†

* If the minimum number of cases is observed, the probability of incorrectly concluding that the plant rate exceeds the population rate, when in fact it does not, is less than 0.05.
† Greater than 0.995.

we will make this conclusion with the required degree of assurance (95 per cent).

Consider another example: Say that a difference of three times the general rate is important to find; we want 95 per cent assurance against falsely crying "wolf," and we want 90 per cent assurance that we will find an "above normal" rate if so large a difference does exist. Column 8 in Table 1 is the "3 times" column, and we look down this column until we find a value of 0.90 or more. This occurs on the fifth line. In column 3, the 40 per 100,000 column, the number is 12,500, and in column 6, the number is 10. Thus, we would need 12,500 person-years of observation. If we found 10 or more cases during this period of observation, we would again conclude that the plant rate exceeds the general population rate with the required degree of assurance.

Having decided how large a study must be conducted, in terms of the number of person-years of observation required, it is now important to consider how we will get this population for study.

Selection of Employee Population

In studying the incidence of cancer among members of an industrial population, it is essential that the study group be made up of individuals employed for a period long enough to constitute effective exposure to the suspected cancer hazard and that these individuals be followed for a long enough period so that the effects of exposure may manifest themselves in a diagnosable condition. Changes in

methods of manufacture present a complicating factor, because an individual with a particular job title may have experienced different types of exposure as manufacturing methods changed. An individual's work experience prior to employment in the plant under investigation also presents a complicating factor.

It is desirable to restrict the study group to categories of employees coming into intimate contact with the suspected cancer hazard. Unless the suspected cancerigenic agent affects the general atmosphere of the plant, the inclusion of administrative, warehouse, and other categories of employees who are not directly exposed to the suspected hazard will materially dilute the apparent effects of the cancerigenic agent and the existence of a hazardous operation may be missed in a plant which is generally not hazardous. For example, let us assume that out of a total of 5,000 male employees, 500 are directly exposed to a cancer hazard. The incidence rate of respiratory cancer for these 500 employees is 5 times normal (200 per 100,000 per year), while the incidence rate for the remaining 4,500 employees is normal (40 per 100,000). With no special cancer hazard in this plant, an average of 2 respiratory cancer cases would be diagnosed annually among the 5,000 employees. In this particular plant, however, we would expect an average of 3 cases per year—2 cases drawn from the population of 4,500 employees not coming in contact with the cancer hazard, plus one case drawn from the population of 500 exposed employees. However, an observation of 3 cases compared to an expectation of 2 cases would not be statistically significant. Thus, data based on the experience of the total population of male employees would not point to the existence of a hazard though one does exist.

If we had knowledge which could lead us to restrict the study to the employees directly exposed to the suspected cancerigenic hazard, the size of the study group would be reduced to 500. Under the conditions stated above, in one year, we can expect one case of respiratory cancer. However, the observation of just one case would not permit us to reach a statistically sound conclusion concerning the existence of a cancer hazard. It would be necessary to keep the study group under observation for a number of years, as the data in Table 1 show.

Collection of Data

Having defined the employee population to be studied, one must establish a procedure for collecting the necessary information. A number of alternative methods are possible.

Company Medical Records—Medical records maintained in some industrial plants may be sufficiently complete to serve as the primary source of information concerning the incidence of specific disease categories among employee groups. In some instances, plant medical records may be supplemented by information available from medical care programs and insurance carriers. Under this procedure, the records for some period of time are reviewed and the number of diagnosed cancer cases are enumerated. An incidence rate is computed by relating the number of cancer cases to the average number of persons employed during the study period. This rate may then be compared to the rate for a "normal" population, with appropriate adjustments for the composition of the employee group with respect to race, sex, and age.

This procedure is valid only if the medical records contain information on every case of cancer diagnosed among all members of the employee group under study. As a minimum, the medical records would have to be sufficiently

complete so that all episodes of illness which may have led to a diagnosis of cancer can be selected for follow-up. However, even if the company's medical records provide a complete and reliable source of information, relatively rapid employee turnover, coupled with an extended latent period, may result in a gross understatement of the cancer incidence rate.

Company Personnel Records—Since many plants do not have comprehensive medical care and health insurance programs, an alternative approach would be to obtain a list of all persons dropped from the payroll due to illness. These persons are then followed in order to determine the nature of the illness. This procedure is predicated on the assumption that the company records can be used to identify every employee who stopped working due to illness. In practice, even if the company records reasons for termination of employment, the plant records may appreciably understate the number of employees that stopped work due to illness. Persons discontinuing work due to ill health may not inform the company unless they benefit by having this information on record.

This approach requires that every employee dropped from the payroll due to illness be followed so that a definitive diagnosis may be determined. Consequently, if a company's records can serve as a reliable source of information concerning employees stopping work due to illness, an extensive follow-up program would have to be carried out. This involves locating and interviewing the employees who stopped work, visiting individual physicians, examining hospital and clinic records, and reviewing death certificate files. Employees who left the community subsequent to termination of employment may be lost to follow-up.

Follow-Up of Persons Employed as of a Given Date—The most direct method for doing a plant survey is to obtain a list of employees on the payroll as of a given date. Individuals who were employed for some minimum length of time in the suspected operation can then be selected for follow-up in order to determine the number that developed cancer during a specified period. The group to be followed may be selected in one of two ways: (1) employees on the payroll as of a current date may be followed forward, or (2) employees on the payroll as of a prior date may be followed through a current or future date. In either case, it is necessary to follow up every (or nearly every) employee in the study group in order to identify the ones who developed a serious illness during the study period and to ascertain the nature of the illness.

It must be emphasized that the employee population to be studied should be made up of individuals employed for a period long enough to constitute effective exposure to the suspected cancer hazard and that these individuals must be followed for a period long enough for the effects of exposure to manifest themselves. From this point of view, starting with a payroll list of 5, 10, 15, or 20 years ago would seem advantageous. On the other hand, a large proportion of individuals employed on this prior date may have left the plant and the community and be lost to follow-up. It is undoubtedly easier to follow members of the study group if the study is carried forward from a current date. The decision will depend on information concerning the rate of employee turnover, the average period of exposure to the suspected hazard, and estimates of the latent period for the form of cancer under study.

Evaluation of Results

Assume that funds were available for conducting a study of the proper size,

Table 2—Interpretation of Observed Number of Cases

Observed Number of Cases	Minimum Number with Probability of:			Maximum Number with Probability of:		
	0.05	0.10	0.20	0.05	0.10	0.20
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	*	*	*	4.8	3.9	3.0
2	*	*	*	6.3	5.4	4.3
3	*	1.1	1.5	7.8	6.7	5.6
4	1.3	1.7	2.2	9.2	8.0	6.8
5	1.9	2.4	3.0	10.6	9.3	8.0
6	2.6	3.1	3.9	11.9	10.6	9.1
7	3.2	3.8	4.7	13.2	11.8	10.3
8	3.9	4.6	5.5	14.5	13.0	11.4
9	4.6	5.4	6.4	16.0	14.3	12.6
10	5.4	6.2	7.2	17.0	16.0	13.7
11	6.1	7.0	8.1	19.0	17.0	14.8
12	6.9	7.8	9.0	20.0	18.0	16.0
13	7.6	8.6	9.9	21.0	19.0	18.0
14	8.4	9.4	10.7	22.0	21.0	19.0
15	9.2	10.2	11.6	24.0	22.0	20.0
16	10.0	11.1	12.5	25.0	23.0	21.0
17	10.8	11.9	13.4	26.0	24.0	22.0
18	11.6	12.8	14.3	27.0	25.0	23.0
19	12.4	13.6	16.0	28.0	26.0	24.0
20	13.2	14.5	16.0	30.0	28.0	25.0

* Less than 1

that the employee population selected for study was successfully followed, and that a given number of cases of (let us say) respiratory cancer have been observed. For this observed number of cases we can compute probable upper and lower limits on the actual rate in the plant. These are analogous to confidence limits on a simple average. Table 2 presents 90, 80, and 60 per cent confidence limits for observations of from one to 20 cases.* In the first example given above assume that 8 cases were found in 5,000 person-years of observation. The best estimate of the plant rate is, of course, 160 per 100,000. To obtain 90 per cent confidence limits on the rate read down column 1 in Table 2 to the number 8, the number of cases found. Column 2 gives minimum numbers of cases and column 5 maximum number of cases, each with probabilities of 0.05. The numbers in these columns opposite 8 are 3.9 (minimum) and 14.5 (maximum). These numbers are associated with rates of 78 and 290 per 100,000. If 4 cases were observed in the same plant population, the best estimate of the rate in the plant is 80 per 100,000, with 90 per cent confidence limits of from 26 to 184 per 100,000.

From a knowledge of these limits, the evaluation of the results of the investigation is greatly enhanced. The confidence limit concept can be used to arrive at meaningful decisions about

* Confidence limits have traditionally been quoted with the probability that the interval includes the true population value. However, Table 2 gives the probability that the true population value will be either below the lower limit or above the upper limit of the interval.

further work. If the number of observed cases is smaller than the critical number given in Table 1, we will conclude that the plant rate appears to be compatible with the general population rate. However, it does not necessarily follow that the plant is perfectly safe and that the investigation should be dropped, for the question might be asked: "Given the number of cases found, what is the maximum possible rate, on a probability basis, that might exist in this plant and still produce as few cases as we found?"

Conversely, if the observed number is greater than the critical number, we will conclude that the plant rate is above "normal." However, this does not mean that the situation is necessarily serious enough to warrant the expenditure of large sums on safety measures. We would like to know whether the plant rate is substantially greater or only slightly greater than normal. This leads to the question: "Given the number of cases found, what is the smallest possible rate, on a probability basis, that might exist in the plant and produce as many cases as we found?"

As an illustration, we refer to the previous example cited. Say eight cases were found in 5,000 person-years of observation. This is more than 6, the critical number given in Table 1, column 6, and we conclude that the plant rate is "above normal." Our best estimate of the plant rate, 160 per 100,000 is 4 times the general population rate of 40 per 100,000. However, 8 cases in 5,000 person-years of observation could have arisen out of a smaller basic rate than 160 per 100,000. We now wish to use Table 2 to compute a possible minimum rate on a probability basis. Suppose that we wish to be very cautious before undertaking corrective action; we therefore would want to give our plant every opportunity to be called nonhazardous. We would then look under the 0.05 column (column 2) to find the lowest rate that could, with a 5 per cent probability, yield as many as 8 cases. The number in this column, opposite 8, is 3.9. This implies a rate of 78 per 100,000. We can now ask: "Is corrective action warranted, if the plant rate is really as low as 78 per 100,000, which is less than twice the rate in the general population (40 per 100,000)?"

It must be remembered that we have stacked the cards against a decision favoring corrective action by taking a minimum with a probability of only 5 per cent. If we wanted the smallest rate that could produce as many as 8 cases, 20 chances in 100, we would look under column 4 of Table 2. This would yield a minimum rate of 110 per 100,000 to compare with the general population rate of 40.

The opposite situation must be considered, too. Suppose the study has turned up fewer than the critical number of cases given in Table 1, column 6. Assume that in the preceding example only 4 cases of respiratory cancer were observed in 5,000 person-years of observation. Although the observed number, 4, is twice the number expected at the general population rate, 2, it is less than the minimum number of cases, 6, required to conclude that the plant rate is "above normal." Are we safe in concluding that no hazard exists, or should the investigation be continued? This question can be answered by determining, in some probability sense, the maximum plant rate that could have produced 4 cases. This determination can be made by referring to columns 5, 6, and 7 of Table 2. If a hazard exists, we want to protect ourselves against understating the possible maximum, so we select the 0.05 level (column 5) on which to work. The number in column 5 opposite the number 4 (the actual number of cases observed) in column 1, is 9.2. Dividing this by the expected number of cases, 2, and multiplying by

40 per 100,000, yields a rate of 184. Is a plant with a respiratory cancer rate that is possibly (with 0.05 probability) 4.6 times as high as the general rate worth further investigation? This is, of course, a substantive question, and each separate investigation will have to be considered on its own merits.

Technical Note

It is assumed that the chance distribution of the observed numbers of cases for a given incidence rate follows the Poisson probability law. Thus, if "p" is the incidence rate to which "n" person years are subject to risk, the average number of cases is $np = a$. Then according to the Poisson law, the probability of observing exactly X_0 cases is

$$\frac{e^{-a}\, a^{x_0}}{x_0!}$$

and the probability of observing X_0 cases or more is

$$\sum_{X=X_0}^{M\infty} \frac{e^{-a}\, a^{x}}{x!}.$$

Tables 1 and 2 depend upon the evaluation of these sums for particular values of "a," or determining "a" for a given value of the sum. For these purposes, Molina's tables on the Poisson law were used (Molina, E. C., Poisson's Exponential Binomial Limit. New York: Van Nostrand, 1947).

Medical Research Fellowships

Awards designed to offer research experience for promising individuals planning investigative careers are announced by the Division of Medical Sciences of the National Academy of Sciences-National Research Council. Applications for postdoctoral research fellowships for 1955–1956 are now being accepted and must be postmarked before December 10, 1954. Ordinarily, only persons 35 years of age or under are eligible.

The programs for which the division selects candidates include fellowships in cancer research and British-American exchange fellowships in cancer research, awarded by the American Cancer Society. The former, available to United States citizens, are for study in the biological, chemical, and physical sciences and of clinical investigation related to either typical or malignant growth. The latter are for advanced study in Great Britain. The British Empire Cancer Campaign in turn provides similar fellowships for British citizens to study in the United States.

The Medical Fellowship Board of the division administers fellowships for the Rockefeller Foundation, the Lilly Research Laboratories, and the National Tuberculosis Association. The first two are for research in the basic medical sciences. The first is open to citizens of both the United States and Canada, the second to United States citizens only. The fellowships for tuberculosis investigators are open to United States citizens who are graduates of American schools.

Further details and application blanks from Fellowship Office, National Academy of Sciences-National Research Council, 2101 Constitution Ave., N. W., Washington 25, D. C.

Strain Variations and Cross-Relationships in Influenza Virus

KEITH E. JENSEN, Ph.D.

This highly technical report on an immunologic study may seem difficult to follow for others than professional groups addressed, but all will be interested in its hopeful finding that, despite the complexities of the problem, immunization against influenza seems not to be unsolvable.

Some of the complexities of immunologic problems to be met with in influenza were first realized in 1938 with the observations of antigenic variability among virus isolates.[1-4] The data suggested to Magill and Francis [2, 3] that certain similarities in the composition of antigenically distinct strains were due to shared antigens. They pointed out that many strains did not fit into even loosely defined groups, but represented instead a spectrum of interrelationships. Certain investigators,[4-9] however, have attempted to categorize isolates with sera prepared against a limited number of prototype strains. Although sera are commonly prepared in a manner which emphasizes the dominant antigen of a virus, they contain antibody to some of its lesser antigens. The results, therefore, do not indicate whether the reaction of a test strain with a given serum is the result of antibody to a single dominant antigen or to several components shared with the prototype strain. Hence, many differences and relationships among strains may not be discovered.

A more precise definition of antigenic components can be obtained by absorption of crossing antibodies so as to create antisera against a single strain of virus. The resultant strain-specific sera define distinct antigenic components. Friedewald [10] first demonstrated that this could be done with influenza virus and concluded that quantitative as well as qualitative differences in components gave antigenic distinction to strains. Later Hirst [11] adapted this procedure for classifying strains by their reactions with absorbed sera prepared with but seven prototype strains. This approach tends to ignore the composite antigenic structure of influenza virus and demonstrates only the single antigen shared with that prototype strain.

It is obvious that an adequate mapping of the antigenic constitutions of the influenza viruses is necessary for a comprenensive understanding of strain relationships. However, the application of quantitative absorption procedures which could define these relationships has been limited by such technical burdens as the preparation of concentrated antigenic masses, the separation of

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added virus from absorbed serum, and the difficulty of establishing quantitative standards of absorption with antigens. The demonstration in our laboratory that influenza virus adsorbed to erythrocytes can function efficiently to remove antibody from serum stimulated the development of procedures for insuring stable erythrocyte-virus complexes. The desired firm union between erythrocyte and virus was obtained by treating virus in allantoic fluid with an equal volume of M/25 potassium periodate for one hour. The excess periodate was then neutralized by one-half volume of 10 per cent glucose. This treatment destroys the eluting capacity of the virus, but neither the hemagglutinating activity [12] nor the antigenicity of influenza virus appears to be altered.

Human erythrocytes were stabilized by treatment with 15 per cent formalin for 48 hours, then washed until the odor of formalin was no longer detectable.[13] Virus was adsorbed to these cells and the complex stored as 50 per cent cell suspensions. The minimal volume of cell-virus complex that would completely remove 32 units of homologous antibody in a single absorption defined one absorbing unit. The absorbing unit volume of a preparation has been found to remain constant for several weeks when stored at 4° C. This stability, therefore, provides the obvious advantage of subsequent use in several absorption experiments with confidence in the comparability of results.

Demonstration of the Multiplicity of Antigenic Components

The development of these absorption technics enabled us to investigate the number of specific antigenic components that might be expressed in strains of influenza virus. Convalescent ferret sera were prepared against each of 29 strains representative of the epidemics of influenza A occurring since 1933. The antigenic relationships between these strains were defined by cross-hemagglutination inhibition tests and the results governed the choice of isolates used for preparation of strain-specific sera. It was possible to prepare 18 strain-specific sera from this group of 29 and they were tested with each of

Table 1—Strains of Type A Influenza Virus Studied

1. Swine	Iowa	1931*†
2. WS	Eng.	1933*†
3. PR8	Puerto Rico	1934*
4. Alaska	Alaska	1935*
5. BH	Eng.	1935*†
6. Mel	Austr.	1935*†
7. Phila	Phila.	1935*
8. TF	N. Y.	1936*
9. NY2	N. Y.	1936*†
10. Henry	N. Y.	1936*†
11. Smith	Eng.	1937
12. Gatenby	Eng.	1937*†
13. Talmey	Eng.	1937*†
14. Chris	Eng.	1937*
15. C112	Europe	1939*†
16. Baum	Mich.	1940*†
17. Hickcox	N. Y.	1940*
18. Weiss	Mich.	1943*†
19. IA43	Iowa	1943*†
20. Jacksi	Mich.	1943
21. Ian	Austr.	1946
22. Cam	Austr.	1946*
23. Leiden	Neth.	1947
24. FM1	N. J.	1947*†
25. Rhodes	Mich.	1947*†
26. FJS	Austr.	1948
27. Coamo	Puerto Rico	1948
28. Dean	Mich.	1948
29. Berry	Mich.	1948
30. CA7	Canada	1949
31. Hood	Mich.	1949*
32. O. Is.	O. Is.	1949
33. Roma	Rome	1949*†
34. Neth.	Neth.	1949
35. Chom	Austr.	1950
36. Sweden	Sweden	1950*
37. Cuppett	Wyo.	1950*
38. Tenney	Mich.	1950*†
39. Lond	Eng.	1951
40. Boch	Mich.	1951*
41. Morvac	Mich.	1951*†
42. Jessup	Mich.	1953*†

* = Attempted preparation of strain-specific serum (29 strains)

† = Successful preparation of strain-specific serum (18 strains)

the 42 related strains of virus listed in Table 1. The (†) signs indicate those strains for which highly specific sera have been prepared. Since 18 different strain-specific sera were found, apparently there are at least 18 different antigenic components in Type A influenza virus. Evidence of other components is also available from the unsuccessful attempts to prepare strain-specific sera. Several sera were prepared that would react with only one or two strains other than the homologous virus which indicates a subgroup of strains sharing a specific antigen. When the problems of separation of these strains have been solved, an even greater number of antigenic components may be demonstrated. The results forecast the extreme complexity of antigenic constitution that may eventually be defined for this group of viruses and point out the gross oversimplification of the problem that is found in schemes for writing antigenic formulas in terms of three, four, or seven antigenic components.

Assay of Antigenic Composition of Strains

The search for specific antigens is of obvious interest and must be continued, but a primary objective was to compare the composite antigenic structures of strains of influenza virus. The procedures which had been so fruitful in preparing strain-specific sera were adapted to this problem with gratifying results. If a serum were available which contained equal amounts of antibody to all of the antigenic components, absorption with a standard amount of any strain of virus would remove antibody to the components present in that strain, and the extent of the absorption of the various antibodies would describe the antigenic structure of a test virus.

For this purpose, sera from ferrets convalescent from infection with one of a group of 17 strains, believed to represent a majority of the currently recognized specific antigenic components, were pooled to contain a comparable titer of H-I antibody to each of the viruses. Aliquots of the pool were absorbed with a standard number of absorbing units (six) of each strain to be analyzed. Each aliquot was then tested for the amount of antibody remaining for each of the test strains. The amount of antibody reduction observed furnishes an estimate of the relative concentration of each antigen in the composite virus. Table 2 presents a summary of the information gained concerning the relative concentrations of these components for several Type A strains of influenza virus. The block M designates a major antigenic feature, that is where antibody titers were reduced by 16- to 64-fold, while less prominent antigens were mirrored by four- to eight-fold reductions and are indicated in the table by the small m.

Many components are often shared by these strains as either minor or major antigens. Noteworthy, too, is the trend toward a continuing change in antigens expressed as a major feature in the antigenic profiles. But the fact that the components now considered representative of older strains are readily demonstrable in recent strains points out the probability that antigenic variation could proceed toward dominance of antigens found as principal antigenic constituents in either old or recent strains. The shared antigenic relationship between the PR8 (1934) and Weiss (1943) strains is illustrated and the major antigenic differences in their composites are equally apparent. Of particular interest is the observation that some of the older strains (Alaska, BH, Hickcox) possess significant amounts of antigens most prominent in strains of recent years. The number of old antigens reflected in the A-prime group of strains (those isolated since 1946) is variable, and the shared anti-

Table 2—Prominent Antigenic Features

Analyzed Strains	Antigen Representative Strains																
	Sw 1931 A1	WS 1933 A2	PR8 1934 A3	BH 1935 A4	Mel 1935 A5	TF 1936 A6	Gat 1937 A7	Tal 1937 A8	Bam 1940 A9	Wes 1943 A10	Cam 1946 A11	Rbo 1947 A12	Ber 1948 A13	Cup 1950 A14	Ten 1950 A15	Mor 1951 A16	Jes 1953 A17
Swine 1931	1M		3m														
WS 1933		2M		4m	5m	6m	7m										
PR8 1934		2m	3M	4m	5m	6m	7m	8m	9m	10m							
Phila 1934		2m	3M	4m	5M	6M	7m	8m	9M	10M							
Alaska 1935		2m	3M		5M	6M	7m		9M	10m	11m	12m		14m	15m	16m	
BH 1935		2M	3m	4M		6m	7m				11m	12m	13m	14M	15m	16m	
Mel 1935		2m	3M	4m	5M	6M	7m		9m	10m						16m	
Henry 1936		2m	3m	4m	5m	6m	7m	8m	9m	10m					15m		
TF 1936		2m	3M	4m		6M			9m	10m		12m					
Gatenby 1937	1m	2m	3m	4m	5m	6M	7M		9m	10m							
Hickcox 1940	1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11M	12m	13m	14m			
IA43 1943		2m	3m	4m	5m	6m		8m	9m	10m							
Weiss 1943		2m	3m	4m	5m	6m	7m	8m	9m	10M							
Cam 1946		2m	3m			6m	7m		9m		11M	12M	13M	14M	15m	16m	
FM1 1947		2m	3m	4m	5m	6m	7m		9m	10m	11m	12M	13M	14M	15m	16m	
Rhodes 1947	1m	2m	3m	4m		6m			9m		11m	12M	13M	14M	15M		17m
Berry 1948		2m				6m					11m	12m	13M	14M	15m	16m	
Roma/2 1949		2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12M	13m	14M	15M	16m	
Cuppett 1950		2m		4m	5m						11m	12m	13M	14M	15m		
Tenney 1950		2m	3m		5m	6m	7m		9m		11m	12M	13M	14m	15M	16m	17m
Sweden/3 1950		2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16M	
Moravec 1951			3m	4m		6m	7m	8m			11m	12m				16M	17m
Jessup 1953						6m					11m	12m	13m	14m	15m	16M	17M
Wright 1953		2m	3m	4m		6m	7m	8m		10m	11m				15m	16M	17M

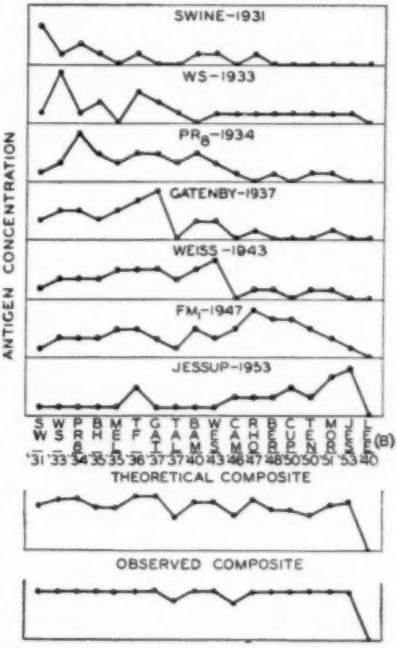
M = Major antigen; reduced antibody titer 16- to 64-fold
m = Minor antigen; reduced antibody titer 4- to 8-fold

genic relationship through prominently featured components can also be delineated within this group. The antigen represented by the 1951 strain is again readily observed in the 1953 isolations, but an antigen not often expressed previously is featured in a major role in the latter.

The probability of the appearance of completely unrelated antigens and complete disappearance of old antigens appears small. Even with the limited

number of strains examined here, there are no examples of the prominent expression of an antigen not demonstrated in strains isolated several years before, nor are antigens lost, never to reappear. Moreover, the interrelationships are such as to retain characteristics of Type A virus in all the strains. The data portend a finite number of different antigenic components and give a pattern of variation within which the successive strains usually reflect relatively minor differences in antigenic constitutions. These observations do not suggest completely unpredictable variation, but probably represent the effect of a series of dynamic directive forces selecting strains with slightly different antigenic combinations from heterologous virus populations. The selective influence of high levels of antibody against certain components of a virus or a competitive interference among strains at the site of infection could be among the mechanisms directing the choice of prevalent strains. It appears probable, therefore, that eventually epidemic strains will again prominently feature the major antigens of our earliest isolates.

Figure 1—Antigenic profiles of strains proposed for production of Type A influenza vaccine



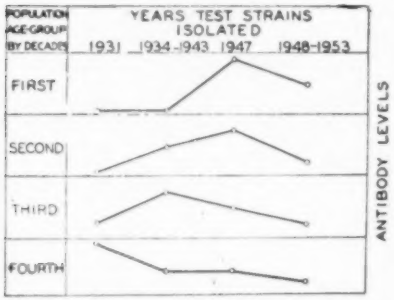
Concentrations of antigens as reflected by removal of antibody in absorption tests

Effective Immunization Against Influenza

The demonstration of 18 different specific antigenic components for Type A strains of influenza virus may seem at first to render the problem of immunization against the disease almost unsolvable. However, the information gained concerning the wide sharing of antigens, often in major quantities, suggests that all identified components might be adequately represented in a vaccine by a careful selection of strains. With mineral oil adjuvant vaccines [14] only small quantities of antigen are needed so that several strains of virus can be combined in a single inoculum. Such vaccines should stimulate the desired broad immunity against the disease rather than some antibody for a few antigenic components.

From the data summarized in Figure 1, it appears that a mixture of Swine, WS, PR8, Gatenby, Weiss, FM1, and Jessup strains would satisfy the need. To test this assumption, the pool of 18 sera which contained high levels of antibody to the entire complement of antigens was subjected to simultaneous absorption with four absorbing units of each of these strains. The titer against the Type B, Lee, strain was unaltered, but all other antibody was absorbed except for small residues (1:4) against Talmey and Cam strains. It is apparent then that such a combination should be efficient in stimu-

Figure 2—Relation of antigenic variation in influenza virus to antibody levels of human populations



Data from H-I tests with Type A strains of influenza virus by Davenport, et al.[15]

lating antibody to all known antigens and probably to others which, currently less prominent, may be dominant in strains to be isolated in the future.

Guidance for achieving prophylaxis of epidemic infectious diseases may be furnished the immunologist by studies of the immunity resulting from natural exposure to the etiologic agent. Surprisingly little information has been available about the levels of immunity resulting from successive infections with antigenically related strains of influenza virus. Recently, however, a group in our laboratory [15] has investigated this problem by measuring, with many different strains, the antibody levels found in sera collected during an interepidemic period and pooled by various age groups. Their data, summarized in Figure 2 as several different patterns of distribution of antibody, led to the following conclusions: (1) The antibodies resulting from the first childhood experiences reflect the dominant antigens of the prevalent strains and are of a limited scope. A very low level of immunity is provided by such antibody since the incidence of influenza is at all times highest in this age group. (2) Successive infections with related strains result in a composite of antibody oriented toward an increasingly larger number of common antigens which constitute influenza virus. (3) The wide range of antibody found in sera from the older age groups limits infection with, and antibody response to, the more recently encountered strains and, in addition, each exposure to a related strain results in a progressive reinforcement of the primary antibody.

Thus, it becomes apparent that the cross-relationships of strains of influenza virus through common antigens outweighs the importance of antigenic variation. The primary problem for analysis remains that of studying the influence of various strains in inducing and heightening homologous and heterologous antibody by vaccination of man with the view toward obtaining effective levels of antibody against all components of influenza virus and the resultant broad immunity against all variants.

NOTE: Since this paper was presented, additional information concerning "The Atigenic Composition of Influenza Virus Measured by Antibody Absorption" has been reported (Jensen, K. E., and Francis, T., Jr. J. Exper. Med. 98:619 (Dec.), 1953.

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Two-Session "Association Symposium" to Feature 82nd Meeting

An innovation for the Association's 82nd Annual Meeting in Buffalo will be a special two-session "Association Symposium" sponsored by the general Program Committee. The topic will be "The Impact of Suburbanization on Public Health."

Half-day sessions on Wednesday and Friday afternoons (October 13 and 15) will be devoted to an exploration of the trend to suburbia and its implications for health services and personnel. The objective of the symposium is not to provide a definitive treatment of the subject, but to describe and report facts and trends, bringing to bear the points of view of sociology, public administration, practical politics, and the like, so that health people can see more clearly how their practices and program concepts are or should be affected or modified.

The symposium is being planned and developed as an "all Association" program, with virtually every discipline and field of health interest represented in the make-up of discussion panels and speakers. Discussion is expected to center on case material, portions of which will be visually presented, and audience participation is anticipated.

A special feature of the symposium program will be a consultation booth in the Scientific Exhibit. Specialists will be at hand to discuss problems related to changes in urban communities and the shift to suburbia. Data will be presented in exhibit form and work papers and bibliographies will be available.

Association members who have or are experiencing problems in this area, or have suggestions for the symposium program, are urged to send in their comments and questions.

The symposium is being planned by a special subcommittee of the Association's Program Committee and includes in its membership Clyde M. Berry, Ph.D., Standard Oil Company of New Jersey; Franklin M. Foote, M.D., executive director of the National Society for the Prevention of Blindness; Granville W. Larimore, M.D., deputy commissioner of health of New York State; and William C. Spring, Jr., professor of public health practice, Columbia University. Chairman of the subcommittee is Howard Ennes, director of the Bureau of Public Health, the Equitable Life Assurance Society of the United States.

Effect of Milk and Other Dairy Products on the Thermal Inactivation of Coxsackie Viruses

ALBERT S. KAPLAN, Ph.D., and JOSEPH L. MELNICK, Ph.D.

Evidence is presented of the ability of certain strains of Coxsackie virus to survive in cream in the temperatures currently set for that dairy product.

Perhaps the most widely occurring viruses in the human intestinal tract are those of the Coxsackie group.[1] The marked stability of these viruses has meant that when prevalent in the human population they can readily be recovered from human feces, sewage, and flies. Because fecal contamination of food and drink can occur in nature, the thermal destruction of Coxsackie viruses in the presence of water, milk, cream, and ice cream has been investigated.

Materials and Methods

Coxsackie Viruses from Human Sources—The stools of patients naturally infected with these viruses served as a source of these agents. Three different strains were employed in the heating experiments:

1. W–S, 1948 strain, in the form of pooled stools of poliomyelitis patients collected during an epidemic in Winston-Salem, N. C., in 1948. The stool specimens were pooled and frozen immediately after collection and were maintained at −20° C. Besides containing poliomyelitis virus, they were also found to contain a mixture of Coxsackie viruses belonging to two distinct antigenic types, B1 and A1.[2]

2. GJ strain, in the form of stools of a technician who had become ill with a laboratory infection. The virus isolated was identified as belonging to Type A4 (Texas–1).[3]

3. JLM strain, in the form of stools of an investigator who had also acquired an infection while working with these agents in the laboratory. In this instance the virus was found to belong to Type B1 (Connecticut–5).[3]

Mouse-Passaged Virus—In addition to human fecal material furnishing a source of virus, newborn mice infected with two strains were also used. These were selected because they represent agents which fall into two different antigenic and pathogenic groups.[3, 4] They were:

1. Tex.–1 strain (Type A4). The isolation and description of the properties of this strain have been given elsewhere.[3-6] The virus had been passed five times in newborn mice at the time of the present experiments.

2. Conn.–5 strain (Type B1). The isolation and properties of this strain have also been described.[3-6] The Conn.–5 strain had been passed nine times in mice before the heating experiments described were carried out.

Preparation of Viruses

Coxsackie Viruses from Human Sources—The procedure for the clarification and concentration of stools for the heat experiments has been described in detail.[7] In brief, 33 per cent sus-

pensions of fecal matter were prepared with distilled water and the virus concentrated 10-fold in an ultracentrifuge (100,000 × g for 60 minutes). The sediments which were thrown down in the ultracentrifuge were suspended in either water, milk, cream, or ice cream and were considered to be "undiluted" in the calculation of titration end points. All titrations were carried out by the inoculation of 0.02 ml. of each 10-fold serial dilution subcutaneously into newborn mice (24 hours old or less). The titer of these strains (calculated by the Reed and Muench method) is given in Table 1.

Mouse-Passaged Virus — Newborn mice were inoculated with seed virus of the Tex.–1 and Conn.–5 strains. Animals that came down with typical signs of disease were sacrificed; their heads, feet, tails, and skins were removed, and the animals then eviscerated. The carcasses remaining after this treatment were weighed and mixed in a chilled Waring blendor with nine volumes of each of the four media (water, milk, cream, and ice cream) mentioned previously. The resulting 10 per cent suspensions were spun lightly to sediment the tissue debris. Infectivity titrations were carried out on the supernates as above. For the respective titers and the amount of virus heated see Table 1.

Heating *—1. Holding method: The "standard" conditions for the pasteurization of milk as tested in these experiments were considered to be 61.7° C. (143° F.) for 30 minutes. Aliquots of 1 ml. of the stool and carcass suspensions were distributed into 2 ml. glass ampules which were then sealed and kept in a refrigerator or in an ice water bath until heated. When the ampules were to be heated, they were placed in weighted wire baskets, 10 cm. in length and 3.8 cm. in diameter; the mesh was 6 mm., sufficiently large to permit the free passage of water into the baskets. The latter were closed by means of a wire mesh lid to which a string was attached. The baskets with the enclosed ampules were then plunged into a constant temperature water bath, being held submerged at the desired temperature for 15 or 30 minutes. Immediately afterward they were withdrawn and dropped into an ice water bath. The temperature of the water bath was recorded by a thermometer graduated in 0.1° C. and it was held constant to within 0.05° C.

2. High-temperature short-time method (HTST): For this method of pasteurization, the "standard" conditions were considered to be 71.1° C. (160° F.) for 15 seconds. Experiments were carried out in thin, U-shaped glass capillaries with an average outside diameter of 1.71 mm. and with a length of 40 cm. (about 1.5 ml. in volume).[7] The capillaries were filled with the virus suspensions and both ends sealed. These capillaries were tied with cotton thread by means of which they were lowered into a water bath maintained at

Table 1—Infectivity Titer of Coxsackie Viruses Used in the Heating Experiments

Source of Virus	Strain	Titer (ID_{50})
Human stools	W–S 1948	$10^{-8.0}$
" "	JLM	$10^{-4.5}$
" "	GJ	$10^{-8.0}$
Murine muscle	Tex.–1	$10^{-7.5}$
" "	Conn.–5	$10^{-6.5}$

* The time and temperature relationships which obtain in official pasteurization equipment are in excess of the temperatures 61.7° C. (143° F.) for 30 minutes and 71.1° C. (160° F.) for 15 seconds as used in these experiments. For ice cream, pasteurization usually refers to a minimum of 68.3° C. (155° F.) for 30 minutes; a tentative standard of 79.4°C. (175° F.) for 25 seconds has also been recommended.

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This work was aided by grants from the National Foundation for Infantile Paralysis and from an anonymous donor.

71.1° C.; after heating, they were promptly plunged into an ice water bath. The water bath in which HTST pasteurization was carried out was held to within 0.05° C. of the desired temperature.

Suspending media: Raw milk Grade B, was obtained from a local dairy. Pasteurized heavy cream (38 per cent fat) was purchased on the open market. The ice cream mix (12 per cent fat and 38 per cent total solids) was not aerated and had been pasteurized when received.

Phosphatase tests: In order to follow the extent of pasteurization, phosphatase tests were carried out on the heated suspensions by the method of Sanders.[13]

Determination of virus activity: After the virus suspensions had been heated, 0.1 ml. of a solution containing 2,000 units of penicillin and 10 mg. of streptomycin was added to each ml. of suspension. Newborn mice were then inoculated subcutaneously with 0.02 ml. amounts of the heated suspensions. At least two litters of mice—eight mice per litter—were inoculated with each sample, the animals being observed for a period of two weeks. Deaths which occurred during the first two days after inoculation were considered nonspecific, and those mice eaten by their mothers during the observation period were not considered in the final tabulations. If all or most of the animals in the litters died without paralysis having been observed, the test was repeated.

Experimental Results

Human Coxsackie Virus—1. Holding method: The results in the top part of Table 2 show that the viruses as present in the stool suspensions were inactivated by the holding method of pasteurization of milk (61.7° C. for 30 minutes). Inactivation of the W–S strain suspended in water, milk, or cream occurred after heating at 61.7° C., even though the specimens were submerged in the water bath for only 15 minutes, one-half the "standard" holding period. Suspended in ice cream, this strain was destroyed by heating at 65° C. for 15 minutes. The W–S strain suspended in water survived after being heated at 50° C. for 30 minutes, but was destroyed at 55° C. for 15 minutes. Milk protected the virus so that it was still infectious following heating at 55° C. for 30 minutes; however, it was destroyed at 61.7° C. for 15 minutes. Thus, with virus suspended in milk there is a margin of safety * of no more than 7° C. It is noteworthy that virus was destroyed at lower temperatures than milk phosphatase, the widely used criterion for milk pasteurization.

The W-S virus suspended in cream was inactivated when heated at 61.7° C. for 15 minutes. In the presence of ice cream, however, this virus was not destroyed by heating at 60° C. for 30 minutes, and it was necessary to increase the temperature to 65° C. before the virus was no longer detectable.

The JLM and GJ strains suspended in water and milk were inactivated by heating at 61.7° C. for 30 minutes. These strains suspended in cream and ice cream were inactivated by heating for 30 minutes at 62.7° C. and 71.1° C., respectively. Heating at other temperatures was not carried out.

2. High-temperature short-time method: The HTST method of pasteurization (71.1° C. for 15 seconds) was adequate for the inactivation of these strains of virus as present in human fecal matter. None of the three strains survived regardless of the type of suspending medium employed (see bottom part of Table 2). Inactivation occurred even when the holding time was only 7.5 seconds. Thus, by the

* By margin of safety, we mean the difference in degree centigrade between the standard prescribed minimum pasteurization temperature and the lowest point to which the temperature may be lowered and still cause thermal inactivation of virus.

Table 2—Thermal Inactivation of Human Coxsackie Virus

Strain	Temperature °C.	Temperature °F.	Time (Minutes)	Milk Phosphatase Test *	Fate of Newborn Mice Inoculated with Virus Heated in: Water	Milk	Cream	Ice Cream
W–S	65	149	15	ND	..	..	..	0/10 †
1948	61.7	143	15	36	0/15	0/8	0/8	..
	60	140	30	ND	..	..	..	12/14(12)
	60	140	15	ND	..	..	..	13/13(13)
	55	131	30	>1,000	0/8	10/10(10)	..	..
	55	131	15	>1,000	0/8	9/9(9)	..	..
	50	122	30	>1,000	6/6(2)	..	..	..
	50	122	15	>1,000	16/19(4)	..	..	..
JLM	71.1	160	30	ND	..	..	..	0/8
	62.7	145	30	ND	..	..	0/13	..
	61.7	143	30	6	0/8	0/16	..	..
GJ	71.1	160	30	ND	..	..	..	0/8
	62.7	145	30	ND	..	..	0/11	..
	61.7	143	30	6	0/16	0/8	..	..
				High-Temperature Short-Time				
			(Seconds)					
W–S	71.1	160	15	8	0/16	0/14	..	..
1948	71.1	160	7.5	>1,000	0/13	0/15	..	0/8
JLM	71.1	160	15	8	0/13	0/16	0/7	0/16
GJ	71.1	160	15	8	0/10	0/17	0/16	0/8

ND = Not done.

* The results of the phosphatase tests are expressed in mg. of phenol equivalent per 0.5 ml. of milk, following the method of Sanders.[8] According to this test, properly pasteurized milk should yield no more than 2 gamma of phenol equivalents per 0.5 ml. of sample.

† The numerator indicates the number of mice dead, the denominator the number of mice inoculated; figures in parentheses give the number of mice with observable paralysis.

HTST method of pasteurization, there was a minimum margin of safety by at least 7.5 seconds, considering 15 seconds to be the "standard" holding time.

Mouse-Passaged Virus—1. Holding method: Thermal inactivation of the Conn.–5 and Tex.–1 strains suspended either in water or in milk follows the same pattern found for the viruses as present in the stool suspensions, although the results with cream and ice cream were different. As the data in Table 3 indicate, virus suspended in water and heated at 50° C. for 30 minutes remains infectious for newborn mice. An increase of the temperature to 55° C. was sufficient to destroy this infectivity even though the specimens had been held in the water bath for only 10 minutes. Both strains suspended in milk resisted thermal inactivation at a temperature of 55° C., the specimen being held for 30 minutes in the water bath. However, virus in milk was destroyed by elevating the temperature to 61.7° C. with only 15 minutes of heating being necessary. If "standard" conditions for the holding method of pasteurization are considered to be 61.7° C. for 30 minutes, then for milk there is a margin of safety of less than 7° C.

The results obtained with cream with mouse-passaged virus were different from those obtained with human fecal virus. The Conn.–5 strain suspended

Table 3—Thermal Inactivation of Mouse-Passaged Coxsackie Virus

Strain	Temperature °C.	Temperature °F.	Time (Minutes)	Milk Phosphatase Test *	Fate of Newborn Mice Inoculated with Virus Heated in: Water	Milk	Cream	Ice Cream
Conn.–5	71.1	160	30	ND	..	..	..	0/13
	67.7	153.8	30	ND	..	..	0/11	0/14
	65.2	149.3	30	ND	..	..	0/15	0/16
	62.7	145	30	ND	..	..	5/12(1)	0/16
	61.7	143	30	6	0/8	0/8	..	5/14(4)
	61.7	143	15	36	0/21	0/27	..	..
	55	131	30	>1,000	0/14	3/15	14/14(7)	13/13(1)
	55	131	10	>1,000	0/8	7/7(1)	..	..
	50	122	30	>1,000	12/13(10)	10/10(3)	..	..
Tex.–1	72.1	161.8	30	ND	..	..	0/10	..
	71.1	160	30	ND	..	..	1/6(1)	0/16
	67.7	153.8	30	ND	..	..	9/12(8)	0/9
	65.2	149.3	30	ND	..	..	9/9(6)	2/9(1)
	62.7	145	30	ND	..	..	20/20(11)	..
	61.7	143	30	6	0/8	0/10	..	16/16(12)
	61.7	143	15	36	0/17	0/20	..	..
	55	131	30	>1,000	0/14	12/12(2)	..	..
	55	131	10	>1,000	0/15	13/13(0)	..	..
	50	122	30	>1,000	14/14(7)	9/9(4)	..	..
			(Seconds)	High-Temperature Short-Time				
Conn.–5	71.1	160	30	ND	..	..	0/15	..
	71.1	160	20	ND	..	..	2/15(2)	0/15
	71.1	160	15	8	0/15	0/14	5/16(5)	1/14(1)
	71.1	160	11	ND	0/16	0/11	..	..
Tex.–1	71.1	160	75	ND	..	..	1/15(1)	..
	71.1	160	60	ND	..	..	3/15(1)	..
	71.1	160	45	ND	..	..	9/14(8)	0/16
	71.1	160	30	ND	0/15	0/16	6/6(3)	0/10
	71.1	160	20	ND	0/16	5/15(5)	..	..
	71.1	160	15	8	0/21	3/13(2)	15/15(10)	0/14
	71.1	160	11	ND	0/13	5/10(4)	..	..

* Gamma phenol per 0.5 ml.

in cream survived heating at 62.7° C. for 30 minutes but was inactivated at 65.2° C. The Tex.–1 strain in the presence of this medium was still infectious after being heated for 30 minutes at 65.2° and 67.7° C. and even slightly so at 71.1° C.; however, at 72.1° C. virus failed to survive (see Table 3).

The Conn.–5 strain suspended in ice cream survived treatment at 61.7° C., but was destroyed at 62.7° C. for 30 minutes. The Tex.–1 strain remained infectious after being held for 30 minutes at 65.2° C., but was inactivated at 67.7° C.

The protective effect of milk, cream, and ice cream, brought out clearly in these experiments with mouse-passaged virus, is shown in Figure 1. The percentage of mice down with disease after being inoculated with virus suspended in these media is indicated for each temperature employed. Thus, Conn.–5 virus suspended in water and heated at 55° C. failed to infect any of the ani-

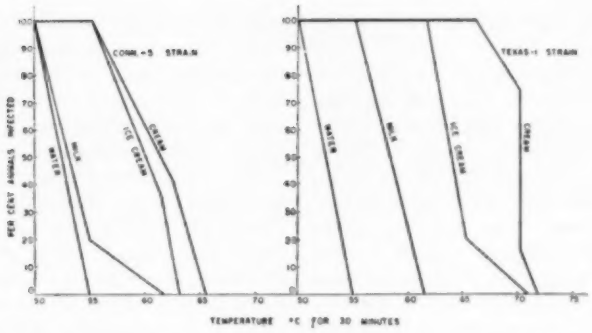

Figure 1—Protective effect of milk, ice cream, and cream on thermal inactivation of Connecticut-5 and Texas-1 Coxsackie viruses

mals, while virus suspended in milk and heated at that temperature caused infection of 20 per cent of the mice. Ice cream was even more protective; 36 per cent of the animals inoculated with virus heated at 61.7° C. came down with disease. Cream showed the greatest protective action by preventing destruction of virus at 62.7° C. to such an extent that 42 per cent of the animals showed signs of disease.

The capacity of dairy products to interfere with thermal inactivation of the virus is shown even more strikingly with the Tex.–1 strain. None of the animals inoculated with this strain suspended in water and heated at 55° C. came down, although all the mice were infected by virus suspended in milk and heated at the same temperature. Ice cream protected the virus to such an extent that 100 per cent of the animals inoculated with virus heated at 61.7° C. became ill, and even 21 per cent came down at 65.2° C. The protective effect of cream was manifested to an even greater degree in the case of Tex.–1 virus: 100 per cent of the mice given virus heated at 65.2° C. were infected, 75 per cent at 67.7° C., and even 16.7 per cent at 71.1° C.

2. High-temperature short-time method: As the results in Table 3 show, heating at 71.1° C. for 15 seconds was adequate for the inactivation of the Conn.–5 strain suspended in water and in milk; in fact, inactivation was attained even when the holding time was only 11 seconds. The Tex.–1 strain suspended in water was also inactivated under these conditions. However, in the presence of milk the Tex.–1 virus resisted thermal destruction even when held at 71.1° C. for 20 seconds; however, virus was inactivated by increasing the holding period to 30 seconds.

The Conn.–5 strain in cream remained infectious for mice after it had been heated at 71.1° C. for 20 seconds; an additional 10 seconds were necessary to inactivate the virus. The Tex.–1 strain in the presence of cream resisted thermal inactivation to a much greater extent; virus was readily detected when heated at 71.1° C. up to 60 seconds, and a trace of virus persisted even after 75 seconds.

Ice cream apparently was not as effective as cream in protecting virus against thermal inactivation. After being heated at 71.1° C. for 15 seconds, Conn.–5 virus was barely detectable, and none was found after a holding period of 20 seconds; 71.1° C. for 15

seconds was sufficient to destroy the Tex.–1 strain.

Effect of Dilution on the Thermostability of Tex.–1 Virus—1. Holding method: It will be recalled that higher temperatures were necessary to inactivate Tex.–1 virus suspended in cream and ice cream than were necessary for Conn.–5 virus. The question arose whether this difference might be due to inherent properties of the two viruses or merely to the difference in the concentration of virus present in the heated samples. To determine what effect dilution would have on the apparent greater thermostability of Tex.–1 virus, suspensions, prepared as described under "Materials and Methods," were diluted 100-fold with the medium in which the virus was already suspended and then heated.

That dilution of Tex.–1 virus reduces its thermostability is readily evident from the results in Table 4. When Tex.–1 virus was diluted sufficiently so that it was equal in concentration to that of the Conn.–5 virus, it had the same heat susceptibilities. In contrast to the more concentrated suspensions, Tex.–1 virus diluted either in water or in cream was inactivated at the "standard" temperature for milk pasteurization, namely, 61.7° C. for 30 minutes. Ice cream still influenced the thermal inactivation of diluted Tex.–1 virus to the extent that almost all (94 per cent) of the mice inoculated with virus heated at 61.7° C. came down with disease. An increase of the temperature to 65° C., however, sufficed to inactivate the virus so that none was detectable.

2. High-temperature short-time method: As shown in Table 4, Tex.–1 virus diluted 100-fold in milk or cream was inactivated at a lower temperature

Table 4—Effect of Virus Dilution on the Thermostability of Texas-1 Virus

Dilution of Virus	Temperature °C.	Temperature °F.	Time (Minutes)	Phosphatase Test* Milk	Phosphatase Test* Cream	Phosphatase Test* Ice Cream	Fate of Test Mice: Water	Fate of Test Mice: Cream	Fate of Test Mice: Ice Cream
10^{-1}	71.1	160	30	..	0.6	0.7	..	1/6(1)	0/16
	67.7	154	30	..	0	0	..	9/12(8)	0/9
	65	149	30	..	0	0	..	9/9(6)	2/9(1)
	61.7	143	30	..	1.8	0	0/8	16/16(8)	16/16(12)
10^{-3}	71.1	160	30	..	0.6	0.7	..	0/23	0/25
	67.7	154	30	..	0	0	..	0/20	0/22
	65	149	30	..	0	0	0/15	0/23	0/20
	61.7	143	30	..	1.8	0	0/15	0/20	18/19(10)
			(Seconds)				Water	Milk	Cream
10^{-1}	71.1	160	15	..	..	..	0/38	5/33(4)	15/35(17)
10^{-3}	79.5	175	15	..	0	..	..	..	0/14
	76.7	170	15	..	0	..	..	..	0/52
	73.9	165	15	..	0	..	..	..	0/49
	72.5	162.5	15	0.4	..	..	..	0/22	..
	71.1	160	15	14.4	0.6	..	..	0/21	0/55
	69.7	157.5	15	48.0	..	..	0/21	0/18	..
	68.3	155	15	>60.0	..	..	0/21	0/15	..

* Gamma phenol per 0.5 ml.

Table 5—Effect of Elevated Temperatures on the Thermostability of Mouse-Passaged Coxsackie Viruses

Strain	Dilution	Temperature °C.	Temperature °F.	Time (Seconds)	Phosphatase Test * Milk	Phosphatase Test * Cream	Fate of Test Mice Water	Fate of Test Mice Milk	Fate of Test Mice Cream
Tex.–1	10^{-1}	79.5	175	15	..	0	..	..	3/38(1)
		76.7	170	15	..	0	..	..	8/50(6)
		73.9	165	15	0.6	0	..	0/17	6/14(2)
		72.5	162.5	15	0.4	..	..	0/22	..
		71.1	160	15	14.4	0.6	0/38	2/20(2)	10/20(7)
Conn.–5	10^{-1}	79.5	175	15	..	0	..	..	6/57(6)
		76.7	170	15	..	0	..	..	3/28(2)
		73.9	165	15	..	0	0/24	..	14/46(7)
		71.1	160	15	14.4	0.6	0/24	0/14	13/27(5)

* Gamma phenol per 0.5 ml.

(68.3° C.) than is usually considered "standard" for HTST, namely, 71.1° C.

Effect of Elevated Temperatures on the Thermostability of Coxsackie Virus —High-temperature short-time method: In the previous experiments of this type (Table 3) in which the temperature was held constant and the time varied, Tex.–1 virus suspended in milk and cream was not inactivated at "standard" conditions; virus in milk was inactivated only after being held for 30 seconds at 71.1° C. and virus in cream not even after 75 seconds. Experiments were therefore carried out in which the time was held constant (15 seconds) and the temperature varied from 71.1° C. to 79.5° C. Again it was found that virus was protected by milk and to a greater extent by cream, so that heating at 71.1° C. did not suffice to inactivate all the virus present in a 10^{-1} concentration of infected tissues (see Table 5). A temperature of 72.5° C. provided enough heat to destroy Tex.–1 virus suspended in milk. However, even a temperature of 79.5° C. was not enough to inactivate completely Tex.–1 virus suspended in cream. The same pattern of resistance to thermal inactivation was obtained with Conn.–5 virus suspended in cream.

Recapitulation

Human Coxsackie viruses as present in fecal matter, whether suspended in water, milk, or cream, were destroyed at milk pasteurization temperature, 61.7° C. (143° F.) for 30 minutes. Virus suspended in ice cream mix, however, had to be heated at 65° C. (149° F.) for 15 minutes before inactivation was achieved. Thermal inactivation in all media occurred also when the viruses from human sources were heated at a temperature of 71.1° C. (160° F.) for 7.5 seconds.

Coxsackie viruses in mouse-passaged lines (Conn.–5 and Tex.–1), when suspended in water, survive 50° C. for 30 minutes. However, they are inactivated at 55° C. when heated for 10 minutes.

Mouse-passaged Coxsackie viruses suspended in water or milk were destroyed at the pasteurization temperature of 61.7° C. for 30 minutes. In cream, Conn.–5 virus had to be heated to 65.2° C. (149.3° F.) for 30 minutes and in ice cream to 62.7° C. (145° F.) for

30 minutes before it was inactivated. Tex.–1 virus in cream was first inactivated at 72.1° C. (161.8° F.) for 30 minutes and in ice cream at 67.7° C. (153.8° F.) for 30 minutes. The latter virus survived 71.1° C. when heated in cream and 65.2° C. when heated in ice cream for 30 minutes.

Conn.–5 virus in water or in milk was inactivated by high-temperature short-time pasteurization, 71.1° C. (160° F.) for 15 seconds. Tex.–1 virus in water was also destroyed by this method of pasteurization; however, in milk the virus survived for 20 seconds, but was inactivated after heating for 30 seconds.

In the presence of cream, Conn.–5 virus survived 71.1° C. (160° F.) for 20 seconds, but was inactivated after a holding period of 30 seconds; in the presence of ice cream it was destroyed after 20 seconds. In cream, Tex.–1 virus was viable after heating for 60 seconds and a trace was still detectable when held for as long as 75 seconds; in ice cream, however, virus was destroyed at the "standard" holding time of 15 seconds.

Milk, cream, and ice cream afford the Coxsackie viruses some protection during the 30-minute holding method of pasteurization. Milk prevented destruction of human and mouse-passaged virus at 55° C. (131° F.). Cream protected Conn.–5 at 62.7° C. (145° F.) and Tex.–1 virus at 71.1° C. (160° F.). Ice cream allowed human Coxsackie virus to survive at 60° C. (140° F.), Conn.–5 at 61.7° C. (143° F.), and Tex.–1 virus at 65.2° C. (149.3° F.).

The dairy products also protected the viruses treated by the high-temperature short-time method. Tex.–1 virus in milk survived heating at 71.1° C. (160° F.) for 20 seconds. Conn.–5 virus in cream was infectious after 20 seconds and Tex.–1 virus after 75 seconds. Conn.–5 virus in ice cream was detectable after 15 seconds.

Considering 61.7° C. for 30 minutes as the "standard" pasteurization of milk, there was a margin of safety of less than 7° C. (or 12° F.) for human and mouse-passaged viruses. With 71.1° C. for 15 seconds as the "standard" for the high-temperature short-time pasteurization of milk, there was a safety factor of at least 7.5 seconds for human Coxsackie viruses and at least four seconds for Conn.–5 virus, but none for Tex.–1 virus.

Dilution of Tex.–1 virus 100-fold reduced its capacity to withstand heating so that when suspended in water and in cream it was inactivated by heating for 30 minutes at 61.7° C. Ice cream afforded more protection to the diluted virus, in that it survived heating at 61.7° C., but not at 65° C., for 30 minutes. The diluted virus in water, milk, or cream was destroyed at 71.1° C. for 15 seconds.

With the time constant (15 seconds), an increase of temperature to 72.5 ° C. sufficed to inactivate a 10^{-1} concentration of Tex.–1 virus in milk. Cream protected both Tex.–1 and Conn.–5 viruses to such an extent that neither agent was completely destroyed after being heated at a temperature as high as 79.5° C.

Discussion

It is apparent that under the conditions of our experiments the holding method of pasteurization is adequate for the inactivation of certain Coxsackie viruses suspended in milk, whether their source be human stools or mouse-passaged lines. It should be emphasized that these experiments were performed with large amounts of virus, most likely in far greater excess than one would expect to find in nature. It is also evident that the high-temperature short-time method for the pasteurization of milk is adequate for the thermal inactivation of at least the human and

Conn.–5 (Type B1) viruses. This method of HTST pasteurization as devised in our laboratory, however, is not capable of inactivating the Tex.–1 strain (Type A4) suspended in milk; in this instance the holding time at 71.1° C. had to be increased to 30 seconds, twice the "standard" holding period, before inactivation occurred. It should be pointed out that since this work was done the recommended minimum temperature for HTST pasteurization has been increased to 71.7° C.

If pasteurization by heating at 61.7° C. for 30 minutes or 71.1° C. for 15 seconds, which is generally applied to milk, is used for cream and ice cream, then it is obvious that neither condition suffices for the inactivation of mouse-passaged virus suspended in the latter media. By the holding method virus suspended in cream survived heating for 30 minutes at the elevated temperature of 71.1° C. and in ice cream to 65.2° C. Thus, if one were to accept as a standard the minimum temperature of 62.7° C., which is used by some dairies for the pasteurization of cream, it is obvious that this temperature might fall short of inactivating virus having the thermostability of mouse-passaged virus. Conditions are somewhat different for ice cream, since for it heating at 68.3° C. for 30 minutes or at 79.5° C. for 25 seconds are the present recommended minimum conditions for pasteurization, and virus is inactivated at these temperatures and times.

The present experiments reveal that substances like milk and its products protect virus against destruction by heat. The results obtained with these Coxsackie viruses are similar to those found previously for poliomyelitis virus.[7] Similar to the experiments with poliomyelitis virus, cream proved to be the most effective protective agent of the dairy products studied; with a holding time of 30 minutes, virus heated in cream was able to withstand 17° C. more heat than virus suspended in water. Protection of virus by cream was striking by the high-temperature short-time method, a trace of virus persisting even after it was held at 71.1° C. for 75 seconds; this may be contrasted with 11 seconds sufficient to destroy virus suspended in water. With a holding time of 15 seconds, both the Tex.–1 and Conn.–5 mouse-passaged strains could be detected in cream after treatment at 79.5° C.

Conclusions

Coxsackie viruses as present in human stools underwent thermal inactivation when heated at 55° C. for 15 minutes or at 71.1° C. for 15 seconds when they were suspended in water. Mouse-passaged viruses (Conn.–5 strain of Type B1 and Tex.–1 strain of Type A4) in water suspension were also inactivated at these temperatures.

Dairy products, such as milk, cream, and ice cream mix, offer a measure of protection to these viruses against thermal inactivation. However, when suspended in milk, the minimum conditions recommended for pasteurization, 61.7° C. for 30 minutes or 71.1° C. for 15 seconds, proved adequate for the inactivation of the fecal strains of Coxsackie virus. The holding method of pasteurization provided sufficient heat for the destruction of the two mouse-passaged strains suspended in milk, but the high-temperature short-time method as used in these experiments did not.

Both methods of pasteurization were found capable of inactivating the human Coxsackie viruses suspended in cream. A temperature of 65° C. for 30 minutes was required for the inactivation of one of these viruses in ice cream. The complete inactivation of the mouse-passaged viruses in cream was not attained under the pasteurization conditions employed.

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Occupational Medicine Lectures

The Faculty of Medicine, Columbia University, announces a series of 10 weekly lectures on Occupational Medicine to be given from 9 to 10 o'clock on Saturday mornings beginning on September 18, 1954. The lectures will be given in Amphitheater I, College of Physicians and Surgeons, 630 West 168th Street, New York 32, N. Y. The lecturers will be members of the staff of the Division of Occupational Medicine of the School of Public Health. The first lecture will give the background of occupational medicine—its history, scope, objectives, and practice. Later lectures will cover toxic metals, solvents, dusts and gases; ventilation, lighting, and noise; and elementary nuclear physics and radiation hazards. The final session will be a written examination, optional for visitors.

Further Investigation into the Association Between Immunizing Injections and Paralytic Poliomyelitis

ANN M. PEACH and A. J. RHODES, M.D., F.R.C.P. (Edin.)

The recurring question, whether to immunize or not to immunize—just before the time of the anticipated polio season — plagues so many in the health field that the clear conclusions of this study should prove to be of widespread interest.

It seems now to be well established that the intramuscular inoculation of irritant drugs or certain types of prophylactic antigens may serve to precipitate paralytic poliomyelitis in the limb inoculated within a period of four weeks. The literature on this subject was reviewed in a previous publication from this hospital.[1] Since that time, a number of reports in a similar vein have appeared. For example, the papers of Geffen, et al.,[2] and Grant [3] both refer to the effect of immunizing injections on increasing the severity of paralysis. Choremis and Nicolaides [4] studied an outbreak of poliomyelitis in Greece in 1950 and also reported on the association between the site of injection and the site of paralysis. Rosen and Thooris [5] investigated an epidemic of poliomyelitis in French Oceania. It was clearly shown that the intramuscular injection of organic arsenicals, bismuth, or mercury, for the treatment of treponematosis, increased the incidence of paralysis as compared to a control group and served also to localize the site of paralysis. The report of Townsend-Coles and Findlay [6] attributes a similar action to intramuscular quinine.

It may be said that this localizing effect of irritant injections can be readily explained by current knowledge of the pathogenesis of poliomyelitis.[7] It is probable that virus leaves the blood stream during the period of viremia, and settles in the traumatized area. Further spread is presumably by way of nerve fibers to the spinal cord.

It is evident that some method of diphtheria immunization, other than the use of alum-precipitated antigens which is in common use in many countries, must be sought.[8] In Canada for many years such immunization has been routinely effected with a less irritant antigen, namely fluid diphtheria toxoid ("anatoxine") administered by the subcutaneous route in the arm. Of recent years tetanus toxoid and pertussis vaccine have been added to constitute a "triple antigen." In a previous report on this subject one of us [1] could find no evidence, in the 1951 poliomyelitis epidemic in Toronto, that this type of immunization procedure served to localize paralysis in the arm injected. In 1952 there were insufficient numbers of paralytic cases admitted to this hospital to repeat this study, but the opportunity presented itself in the summer and fall of 1953 when it was possible to investigate 236 cases of febrile paralytic illness, typical in all respects of poliomyelitis.

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Method of Inquiry

During the period July-December, 1953, inquiries were made about 236 cases of paralytic poliomyelitis admitted to the Infectious Service of this hospital. Nonparalytic patients were not included in the survey, because too few were admitted to warrant such an inquiry. Of the 236 paralyzed children, 89 had bulbar poliomyelitis, and 147 had spinal or bulbo-spinal paralysis. The ages of the patients ranged between four months and 14 years, 73 per cent being under seven years of age.

The parents were spoken to personally by one of us and they were asked to state the dates on which immunization injections had been given and the site of injection. As mentioned previously, immunization in the Province of Ontario is carried out with diphtheria fluid toxoid, combined with pertussis vaccine and tetanus toxoid. This is given routinely by the subcutaneous route in the arm and never intentionally intramuscularly.

The dates of injections as given to us by the parents were confirmed in every case, either by referring to the private pediatrician, or by checking with the public health clinic record cards or the school authorities. We found that the mother could usually remember without difficulty in which arm the injection had been given.

Results

It will be seen from Table 1 that of the 89 patients with bulbar paralysis, eight (9 per cent) had received immunizing injections in the 90 days prior to the onset of symptoms of poliomyelitis; of the 147 children with spinal or bulbospinal paralysis, 18 (12 per cent) had received injections in the same period of time. There was therefore no significant difference in regard to the history of recent immunization between the children with limb paralysis and those with bulbar paralysis. Of these 26 poliomyelitis cases with a history of immunization, only eight had been immunized in the 28 days before the onset of symptoms of poliomyelitis. McCloskey [9] and Hill and Knowelden [10] in their independent studies had shown that of the children immunized and paralyzed, 72 per cent had received their injections within the month prior to the onset of poliomyelitis. Our series does not show this "bunching" effect in the 28 days following injection, only eight of 26 (30 per cent) of our immunized and paralyzed children having been inoculated in that space of time. This absence of "bunching" effect is

Table 1—Cases of Paralytic Poliomyelitis, Toronto, 1953: Number of Children Immunized Within Three Months of Onset

Type of Illness	Number Investigated	Number Immunized Within 90 Days of Onset	Number Immunized Within 0–28 Days of Onset	Number Immunized Within 29–90 Days of Onset
Bulbar	89	8 (8.9%)	2	6
Spinal or Bulbo-spinal	147	18 (12%)	6	12
Total	236	26 (11%)	8	18

Table 2—Cases of Spinal or Bulbospinal Poliomyelitis: Sites of Paralysis in 18 Immunized Patients

Period Between Immunization and Onset of Symptoms	Number Investigated	Site of Injection only Paralyzed	Site of Injection and Other Limbs Paralyzed	Paralysis Elsewhere Than Site of Injection
0–28 days	6	0	3	3
29–90 days	12	2	1	9

apparent both in the group with bulbar poliomyelitis and those with spinal or bulbospinal paralysis.

Table 2 shows the sites of paralysis of the 18 immunized children with spinal or bulbospinal paralysis. Of the six immunized in the month prior to onset of poliomyelitis, none were paralyzed in the injected arm only, and three were paralyzed in other sites as well as the injected arm.

Table 3 shows the combined results of the previous (1951) study and the present (1953) study. In the two series there is a remarkable similarity between the numbers of paralyzed children who had been immunized, both in the bulbar groups and in the spinal or bulbospinal groups. The results show an over-all figure of 10 per cent of paralyzed children who had been immunized in the 90 days preceeding the onset of poliomyelitis. It will also be seen, when the figures in the two studies are combined, that there is no evidence of "bunching" in the 28 days before onset of poliomyelitis.

Summary

1. Between July and December, 1953, 236 cases of paralytic poliomyelitis admitted to the Hospital for Sick Children, Toronto, were studied with regard to recent immunization against diphtheria, pertussis, and tetanus. Histories were obtained directly from the parents and were verified.

2. Of 89 with bulbar paralysis, eight gave a history of immunization in the

Table 3—Cases of Paralytic Poliomyelitis, Toronto, 1951 and 1953: Number of Children Immunized Within Three Months of Onset

Type of Illness	Year of Study	Number Studied	Number Immunized Within 90 Days of Onset	Number Immunized Within 0–28 Days of Onset	Number Immunized Within 29–90 Days of Onset
Bulbar	1951	52	4	1	3
	1953	89	8	2	6
		141	12 (8.6%)	3	9
Spinal and Bulbospinal	1951	183	16	5	11
	1953	147	18	6	12
		330	34 (10.3%)	11	23
Total	1951 and 1953	471	46 (9.7%)	14 (2.9%)	32 (6.8%)

90 days prior to onset of symptoms of poliomyelitis (9 per cent).

3. Of 147 with spinal or bulbospinal paralysis, 18 had a history of immunization within the 90 days (12 per cent).

4. There is no evidence that the immunization procedures were followed by an undue number of cases of paralysis in the period of 28 days following the injection.

5. There was no evidence in the spinal and bulbospinal group that injection precipitated paralysis in the inoculated limb.

6. The results for 1953 and of a previous study carried out in 1951 are compared and show a remarkable similarity. The results of these studies suggest that the immunizing agent of choice for use during times of poliomyelitis prevalence is an antigen free from alum and it can be injected subcutaneously. Such an antigen, in which diphtheria toxoid (formolized or "anatoxine") is combined with tetanus toxoid and pertussis vaccine, is routinely used in Canada.

Conclusions

There is no evidence from our studies that the immunization procedure used in Ontario tends to precipitate paralytic poliomyelitis in the period of 28 days following the injection. In those children immunized within the 28-day period, arm paralysis was no more common than paralysis elsewhere. This study further emphasizes the advisability of using a relatively nonirritant immunizing antigen by the subcutaneous route, if immunization is performed during the course of a poliomyelitis epidemic.

ACKNOWLEDGMENTS—These patients were all admitted to the Infectious Service of the Hospital for Sick Children under the care of Dr. George McNaughton. We wish to express our thanks to him for affording the opportunity of carrying out this study.

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APHA—A Member of National Research Council Division

On June 20, 1954, the Governing Board of the National Academy of Sciences—National Research Council—approved the recommendation of the Division of Medical Sciences that the American Public Health Association be admitted to membership in the division for a term of three years beginning July 1, 1954. At the same time it confirmed the appointment of Roy J. Morton, C.E., Oak Ridge, Tenn., to membership in the division as representative of the APHA for a three-year term ending June 30, 1957. Mr. Morton is chairman of the Executive Board, APHA.

A Critique of "School Health Services"

From the School Administrator's Viewpoint

G. E. RAST

As a part of a School Health Section program at the 1953 Annual Meeting, a city superintendent of schools and a professor of pediatrics were invited to make a critical examination of the newly revised "School Health Services." They agree upon the report's unique and wide usefulness, but each from his widely divergent viewpoint discovers areas of interest in which he feels more might have been said.

"School Health Services" belongs on the workbook shelf of every busy school administrator. Not only does the book contain the best knowledge currently available for the organization and operation of school health services, but it also has the rare quality of communicating that knowledge in a readable manner and in a form most helpful for quick and ready reference.

School administrators commonly ask three questions in the process of exercising judgment on an organizational plan: Does the plan have a clear statement of aims? Does it embody the content and the method for the pursuit of the stated aims? Does it provide evaluative criteria for the measurement of achievement of the aims?

The organization of school health services as described in this book deserves a loud "yes" in answer to the three foregoing questions. The stated aims are not so numerous as to confuse and not so broad as to present interpretational difficulties.

The content summarizes present knowledge without overlooking the fact that school administrators must in all areas, including health services, sometimes be willing to accept less desirable practices necessitated by a particular community's lack of readiness or financial ability for the adoption of the best practice. Consequently, along with the best practice, clearly stated as such, are often listed the alternative, though less effective practices. The content, however, is not concerned merely with practices but also explains the general principles underlying the practices involved in the organization and operation of school health services.

The methods suggested for the organization and operation of school health services are in accord with current administrative theory. They stress the importance of democratic procedures in leadership and working relationships; the "team" approach in planning, operation, and evaluation; and the organization and use of community resources. The familiar sign, "No poaching—this is my private preserve," so common in the past among the various community agencies concerned with health, is replaced by one reading "Welcome—we need each other for the best possible job." How the new coopera-

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This paper was presented before the School Health Section of the American Public Health Association at the Eighty-first Annual Meeting in New York, N. Y., November 13, 1953.

tive approach can be accomplished is very well described in the section dealing with Community Health Councils.

Criteria for the evaluation of the organization and operation of school health services are found abundantly throughout the book. The degree to which some of the criteria have been valuable in actual experience is indicated with frankness. Possibly, a book such as "School Health Services" should not attempt to answer problems that are basically of an administrative nature. However, the following three problems, two of which are definitely administrative, are suggested for consideration in a future revision of the book.

The volume lists 18 duties of the teacher regarding school health services that are sufficiently involved to require inservice training if they are to be met adequately. Added to the multitudes of duties from areas other than health, which also require repeated inservice experience and training, the harassed administrator is justified in asking, "How can I, with an ever-changing staff, necessarily and preponderantly composed of people either bent on marriage or bent by it, hope to provide all the required inservice training?" The answer, perhaps, to this question must come from administrators, but suggested solutions from the specialist in school health services and others would be appreciated.

In these days of doubled enrollments and ever-increasing demands on schools for additional services of many types, the problem of financing present services, let alone increasing them, is prodigious. The fact that current health services are inadequate more often than not adds to the weight of the problem. Yet, only one short paragraph is devoted in the book to the problem of the budget.

Finally, it appears that a future revision of the book might associate its purpose to one of the great needs of this day in which mass destruction of human life has become possible. Albert Schweitzer has inspired many people to realize the preciousness of human life. His belief, communicated to many others, may become a force in strong opposition to the threat of mass destruction. Since school health services are dedicated to the preservation and betterment of precious individual human lives, the suggestion is offered that the relationship of school health to the profound and challenging belief in the preciousness of human life be explicitly established in future editions.

Pediatric Rehabilitation Fellowships for Social Workers

Fellowships for the training of social workers in the field of pediatric rehabilitation are available at the Children's Division of the Institute of Physical Medicine and Rehabilitation of the New York University-Bellevue Medical Center. The fellowships provide from 6 to 11 months of specialized clinical experience in medical social work practice in the rehabilitation of physically handicapped children and youth. The fellowships, which carry a monthly stipend of $250, are open to graduates of approved schools of social work with a minimum of two years of experience, preferably in a hospital.

Like the Children's Division itself, the fellowships are a cooperative undertaking with the Association for the Aid of Crippled Children.

Applications for fellowship may be made to Florence I. Mosher, Children's Division, The Institute of Physical Medicine and Rehabilitation, 400 E. 34th St., New York 16, N. Y.

A Critique of "School Health Services"

From a Pediatrician's Viewpoint

THOMAS E. SHAFFER, M.D., F.A.P.H.A.

No aspect of health programs in schools has needed clarification about the things to do and how to do them as much as has the health service. The other portions of school health programs, (1) the school environment and (2) school health education, have been adequately defined by public health authorities and by educators. The field of school health services has lacked the support of a comprehensive statement until the recent publication of "School Health Services" by the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association with Charles C. Wilson as editor. One of the chief obstacles to establishing standards for school health services, namely, the unusual interrelationships of interests of parents, schools, health departments and other community agencies, and the close bonds between family physicians and the family, has been conquered to a large extent by the coordinated approach to the problem by the committee and the group of 28 contributors and 54 consultants. Every single aspect of child health, education, and public health is represented in the roster of contributors, consultants, and editors.

The scope of school health services is defined in the report as those "procedures [that are established]: to appraise the health status of pupils and school personnel; to counsel pupils, parents, and others concerning appraisal findings; to encourage the correction of remediable defects; to assist in the identification and education of handicapped children; to help prevent and control diseases; and to provide emergency service for injury or sudden sickness."

Though the term "school health services" means to this reader only those services that are offered within the school, these same definitions could easily be applied to goals for health services for school-age children in any situation.

This volume, consisting of 486 pages, is obviously too extensive to be covered fully in the space available. The index alone, from "abdomen" to "x-ray," occupies 13 pages of fine print. It would seem better to examine some of the basic philosophy expressed in the volume and to comment on some of the viewpoints and topics of some special interest or controversial in nature.

Although the focal point of the volume is health services in schools, the basic philosophy expressed is that school health is a part of the broad community plan for child health which normally and ideally begins long before the child reaches the school years. The book supports the basic responsibility of the family for their children's health and emphasizes the family doctor's role in supervising the health of school-age

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This paper was presented before the School Health Section of the American Public Health Association at the Eighty-first Annual Meeting in New York, N. Y., November 13, 1953.

children. It is stated that "school health services supplement, but are no substitute for the health care parents should provide for their children. . . . Supplementing parents activities, the school aims to assure children in school the type of health supervision that the most loving and intelligent parents give them at home." The need for coordination of school and health department activities in the interest of the school-age child and his parents is also stressed.

In its general plan the book follows an orderly discussion of the six previously enumerated goals or essential procedures in school health services. Thus, the early chapters of the book take up appraisal of pupil health, including measurement of growth, appraising visual status, testing auditory acuity, dental health services, and mental health services. Some authoritative standards are set forth for appraising visual status and for testing hearing, with an excellent discussion of eye problems among children and of screening tests to detect need for diagnostic examination. All physicians will benefit from reading descriptions of testing procedures with the Snellen chart, for muscle balance and the "plus sphere test" for farsightedness. The unsuitability of various stereoscopic screening devices for school purposes is pointed out in diplomatic fashion. Teachers will learn much from the discussion of eye problems in general, the nature of eye examinations, and the section on selecting an eye specialist.

Methods for testing auditory acuity are given with chief emphasis on the individual sweep test with the pure tone audiometer. Group audiometer tests are given scanty support. One wishes that the same attitude had been taken with respect to the whisper test and watch-tick test, both of which receive faint praise, but not sufficiently faint to be damning. Those who are wondering about the use of growth charts will not receive much specific help, but they will be strengthened in their desire to use them when growth measurements are routinely taken in school. Wetzel's grid is well known and is sufficiently controversial to merit more critical discussion.

The subject of medical examinations is taken up in some detail. Examinations by the child's own doctor are urged, with examinations at the schools offered for those who cannot obtain them elsewhere. The question of frequency of the examinations is tackled directly by stating that during the school years students should have a minimum of four medical examinations, with those who have signs or symptoms of a health problem receiving more frequent attention. Advantages of carefully performed examinations at less frequent intervals compared to the frequent inspection type of examinations are brought out.

The worrisome subject of periodic or routine examination of athletes is discussed, but some questions are left unanswered. Other than questioning how much of the school health services the examination of the athletes should take, not much is said. The special scope of the examination of athletes is not defined and no mention is made of the need for "condition" or physical fitness as a requisite for engaging in competitive athletics.

Going further into the scope of school health services, there are chapters on Health Counseling and Follow-up of Health Problems, Adjusting Programs to Individual Needs, and a chapter on Some Special Health Problems . . . Heart Diseases, Epilepsy, and Tuberculosis. Emergency care procedures, communicable diseases control, and school sanitation receive a special consideration in separate chapters. In the chapter on Communicable Disease Control, it is encouraging to find a plea for

schools to further the immunization of infants through parent groups and health education. Also in this chapter, there is support for the modern viewpoint that communicable diseases should be controlled by immunization and not primarily by quarantine. The mild viral infections are, in this volume, looked upon as fairly innocuous diseases which are probably more desirable during childhood years than in adult life, so quarantine of contacts is not suggested.

Many portions of the chapter on Health Services in Physical Education and School Camping might be quoted, but the following statement on a vexing subject, frequently termed the "medical excuse problem," is especially interesting: "While a medical examination and other appraisal procedures can be used by the physician to classify pupils for physical activities, it remains the responsibility of school personnel to interpret the physical education program to the physician. The latter, the physician, then becomes a positive force in the guidance of the student rather than one who merely restricts participation." In addition, "too often the role of the physician is thought of solely in restrictive terms rather than as a means of assuring a rich and full physical education program, as is possible for each child. This in no way implies lack of care in classification, but emphasizes a positive rather than a negative, overly-solicitous attitude. It is the responsibility of school personnel to prepare for physicians a classification of activities on the basis of such factors as endurance required and strain involved." There is here a positive suggestion for the solution of the familiar, troublesome medical excuse problem, which in most cases is due to physicians' failure to understand the modern scope of physical education as practiced in good schools.

This particular section emphasizes, in this reader's recurring opinion, that the whole volume will be as helpful to practicing physicians as to nurses, teachers, and others who are officially connected with schools. The modern philosophy that more and more health services for school children should be performed by the family physician leads many to wonder whether the family physician actually is sufficiently informed and experienced in the problems of school-age children and in the practices of the schools in his community to function to the complete satisfaction of the school staff. This publication is one which educators, school nurses, and school physicians could put in the hands of physicians in the community as a guide for health procedures affecting the school-age child and as a means of relating private physicians' activities to the aims of the school.

The final chapters of the volume deal with the Health of School Personnel, Administrative Aspects of School Health Services, Evaluating School Health Services, Legal and Legislative Considerations, and Evolution of School Health Services. The chapter on Evaluating School Health Services is especially well done. The aims of health services in schools are emphasized again and numerous critical evaluative technics are described.

It would be a most unusual circumstance if a critical reader of a new book were not disturbed by omissions or underemphasis of subjects of interest to him. This reader looked vainly for a presentation of the adolescent's particular growth and health problems. The importance of emphasis on these topics in a report on school health services is quite evident. The current report of the School Health Section Committee on Health Service Programs for Secondary Schools is a recommended supplement to "School Health Services."

Another topic which deserves more

than the brief consideration which one finds in the book is the opportunity for health education inherent in the health appraisal. This is indeed an area where practically all physicians and nurses need help.

One especial value of this volume is that at last there is an authoritative compilation of desirable health services for school-age children. In the course of presenting the relationship of health services to the school, a broad view of modern education, particularly as related to children with health problems, is given. This is not a publication which will be likely to lead teachers and nurses into medical fields where they have no training to function. It will explain to teachers the meaning of much that takes place in the health appraisal of their pupils and in that way will help them to understand their students better.

There arises the fond hope that specialists in health fields who read this book will become more interested and enlightened in the business of educating children. One could wish for no more than that this report will lead to increased respect and understanding among all the various individuals from different fields of interest who meet around the child in the accomplishment of school health services.

Status of Cancer Knowledge

A symposium on "Cancer: What We Know Today," is planned at the New York Academy of Medicine, particularly to give the general practitioner a well rounded view of the present status of knowledge about cancer. Constituting the 1954 A. Walter Suiter Lecture, six cancer authorities will participate in the program on November 4. The topics for the four parts of the program are: Changing Incidence of Cancer over the Years, Multiple Views on the Causation of Cancer, The Natural History and Diagnosis of Cancer, and Modern Therapeutic Measures in Cancer and Their Effectiveness.

The Suiter Lecture is annually presented under the auspices of the academy's Committee on Public Health Relations. It is supported by a legacy left by Dr. Suiter to finance lectures in public health or legal medicine. For this cancer symposium the New York City Cancer Committee is cooperating with the Committee on Public Health Relations of the academy.

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The Harmlessness of Fluoridation

Whenever any new procedure is suggested there are always fanatics, quivering with instinctive horror at the notion of any alteration of the supposedly beneficent ways of nature. Opposition to fluoridation of the public water supplies is one of the most outstanding and irrational examples of this particular operation of the human mind (although "mind" is probably not the appropriate word for the actions involved).

There is indeed no rational basis for any such suspicion, but it has been so common a phenomenon that the U. S. Public Health Service has been justified in making a statistical study to see whether any fears are validated by experience. A recent analysis [1] of mortality rates for maladies attributed to fluorine has shown that death rates for heart disease, cancer, intracranial lesions, nephritis and cirrhosis of the liver are no higher in 32 cities using a public water supply containing 0.70 or more ppm than in 32 control cities consuming water with 0.25 ppm or less of fluorine.

It is hoped that these figures may be used as an effective curb on the noisy fulminations of the antifluorimaniacs.

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The Disabled—A Public Health Responsibility

People generally reveal an increasing understanding of the ways by which the handicapped can be helped to live and to work to the best of their abilities. One measure of this growing public comprehension is the recent action of the Congress in which both houses unanimously approved the Administration's program for vocational rehabilitation. The result should be a notable stepping up in the numbers of the handicapped who will be benefited and in the professional personnel involved. Considering the relative youth of the rehabilitation movement this public awakening is a heartening sign, despite the gross inadequacies of service to need.

The growth of the rehabilitation movement and the direction the developing program will take in the next decade were discussed last spring by a panel of experts at a Conference of the Association for the Aid of Crippled Children. We are indebted to Leonard W. Mayo, the director, for an account of the

members' comments. They stressed the point that, although the purely physical aspects of the rehabilitation services are now widely accepted and generally appreciated, a great deal remains to be understood, and applied, in so far as the social and emotional aspects are concerned.

Impressive gains were reported in the conquest of some of the disabling diseases. Conditions that once left a heavy burden of orthopedic handicaps have changed for the better. Poliomyelitis is one such problem apparently closer to solution. In other areas less progress is to be found. Cerebral palsy, currently affecting a half million people, will continue as a major problem during the next decade despite progress in the rehabilitation of individual cases. Hope in this disease, as in muscular dystrophy, lies in the promising research now in progress. At the moment increasing shortages of personnel in all the involved professions continue to plague the nation-wide program. Hope for a solution to this problem lies chiefly in the awakening popular interest and support.

Two of the reasons for the phenomenal popular concern with this newest of all public health services are of immediate moment to all who labor in the health field. The first is a curious blend of benevolence and considerations of hard cash. The physically handicapped and the chronically sick all tug powerfully at the peoples' sympathies. Americans are a warmly impulsive lot—though at times seeming to be willing to "let George do it" where the benevolent service is concerned. But in addition to its strong emotional appeal, rehabilitation saves money!

A review of one year of the country's rehabilitation services is summarized briefly in a revealing popular pamphlet.[1] Of the 66,000 handicapped people rehabilitated in 1951, more than 8,000 had been receiving public assistance—to the tune of $5,700,000 annually. After rehabilitation these same 8,000 earned $14,000,000 in their first year of work, $1,000,000 going back to Uncle Sam in income taxes. The cost of their rehabilitation was $4,000,000, or three-quarters of what it would have required to maintain them had they continued disabled! Is it surprising that the public takes rehabilitation to its heart?

The second factor is a matter of leadership. The burgeoning rehabilitation program has been blessed by an effective organizational pattern—federal, state, and local. Voluntary agencies serving the chronically sick and the physically handicapped have supplemented and extended the official effort. The people, sensing the worth of the many-sided program, have demanded that still more be undertaken.

The job seems overwhelming. At any one moment more than five million of us are physically or mentally handicapped, and a quarter of a million names will be added to the roster of the disabled each coming year. Most of these recruits could be returned to useful life had we the resources. The job, however formidable, is one not soiely of institutional facilities, but equally one of professional services to individuals and families in their homes. It is not the property of any one profession, but an integral part of many.

It is here, in the service of the disabled individual, that the health department staff can contribute so much, in case finding, follow-up supervision in the home, and in referral to competent agency services. The job is so great, the call so insistent, the end so compelling that none can stand idly by while others struggle against still mounting odds.

1. Switzer, M. E., and Rusk, H. A. Doing Something for the Disabled. New York: Public Affairs Pamphlet No. 197, 1953.

Proposed Report on Educational Qualifications of Industrial Hygiene Personnel Other than Medical, Dental, and Nursing*

This is a provisional report published at the request of the Committee on Professional Education of the American Public Health Association before transmittal to the Governing Council in order to permit the members and Fellows of the Association to review it and to offer criticism and suggestions. All comments will be carefully weighed by the Committee on Professional Education and accepted changes will be incorporated in the report before presentation to the Governing Council for action. Address comments to: Secretary, Committee on Professional Education, American Public Health Association, 1790 Broadway, New York 19, N. Y.

I. General Scope of the Field

A. The educational qualifications of the various professional personnel working in the broad field of occupational health, the industrial physician, nurse, dentist, and hygienist, are quite different and require separate treatment. Only those for industrial hygienists are considered here.

B. Specific contributions to public health by workers in industrial hygiene are:

1. The prevention of occupational diseases.
2. The recognition, evaluation, and control of possible causes of ill-health originating in the industrial environment, in addition to those related to particular occupational diseases.
3. Participation in community-wide public health programs in recognition of the fact that the health of workers is affected by community environment and the home.

C. Future outlook: Since it is impossible to create a definite cleavage between general health problems of a community and those which pertain to industrial health, the outlook in industrial hygiene is identical with that of public health. There are, however, opportunities for service and advancement inherent to the industrial field which are not found in some other phases of public health work.

D. Promotion and progress in industrial hygiene: These are limited to the capacity of the individual and the rather narrow confines of the general industrial hygiene field. To obtain greater opportunities in industrial hygiene one must, therefore, break through into the wider areas of industrial management and public health.

E. It has been estimated that approximately 2,750,000 workers potentially are exposed to organic dusts; there are 2,250,000 workers potentially exposed to metals, such as lead, chromium, and uranium; more than 1,000,000 each are potentially subjected to the hazards of carbon monoxide, petroleum products, silicate dust, dermatitis products, miscellaneous gases, and silica dust—to mention only a few of the most important hazards. The approximate number

* This report, like all other statements of the committee on professional and technical qualifications in public health, is subject to periodic revision in order that it may be kept abreast of the best thought.

This proposed report is presented as a replacement of the statement on Educational Qualifications of Industrial Hygienists approved by the Governing Council on October 13, 1941.

employed exclusively in industrial hygiene is difficult to determine, but it appears to be within the range of 1,000. This, however, is purely an estimate.

F. Industrial hygiene personnel are employed by federal, state, and community health agencies and industry. The official agencies generally seek to promote development of the field and furnish service mostly for small industrial establishments. The industrial personnel are employed chiefly by the larger industries.

II. Statement of Functions

A. Duties and responsibilities of the industrial hygienist:

1. To observe and examine the occupational environment, plant emissions or community air, with sampling, analysis, and other measurements where indicated; to ascertain their factual relation to the health of employed persons and others in the community residing near the industry. (The analysis of the environment includes not only chemical air contaminants, but also physical factors and stresses those which are hazardous to health or well-being.)

2. To evaluate and interpret the possible and probable effects upon employees of the materials and stresses found, most frequently in cooperation with the industrial physician.

3. To advise on methods of rectifying or controlling any adverse environmental conditions found and to explain the methods in appropriate terms and in sufficient detail so that the persons responsible for their execution will be able to act.

The industrial hygienist will make his work more productive by establishing good relations with plant personnel responsible for employee health and safety and for the selection, installation, and maintenance of ventilating equipment. He will seek to advise in the blueprint and planning stage.

The industrial hygienist's primary responsibility is to protect the health of workmen. He must report factual findings to management and when indicated interpret them and their preventive aspects to the employees. He has an obligation to foster and promote good will between employer and employee and to avoid at all times any offhand or ill-considered remarks that could endanger good employer-employee relations.

The industrial hygienist must have the ability to recognize and evaluate situations of hygienic interest, to differentiate between normal and staged operations, and to prepare interpretative factual reports with control recommendations, couched in sound engineering terms, understandable to persons responsible for their execution. He will seek new and better methods of recognizing and evaluating environmental stresses and improving the relationship between men and machines.

III. Broad Educational Background

For admission to the program of study in industrial hygiene, the candidate must have completed a course of undergraduate study leading to a specific degree in the physical or biological sciences, or both, cognate to the practice of industrial hygiene. Although several such courses of study might be construed as meeting minimum requirements, some are much more satisfactory than others. For guidance of the student, the more appropriate courses are:

B.S. in chemical engineering, with electives in physiology.

B.S. in chemistry, with a major in analytical chemistry and electives in physics and physiology.

B.S. in physics, with major studies in electrical measurement and the field of radiant energy, both electromagnetic and vibratory, and electives in chemistry and physiology.

B.S. in biological or physiological chemistry, with minor studies in physics.

The undergraduate student should bear in mind that industrial hygiene deals primarily with the relationship of

the occupational environment and industry to health. Accordingly, he should, whenever possible, elect courses which will be useful in the ultimate practice of industrial hygiene. Among such courses, one in methods and technics of working with individuals and groups is exceedingly important. Familiarity with industry is of the utmost importance and the student is urged to seek part-time or vacation employment in a large industrial establishment.

IV. Graduate Education

In order to carry out the above functions, industrial hygienists need basic training in (1) epidemiology and biostatistics, (2) industrial and public health administration, and (3) environmental physiology, industrial toxicology, and industrial hygiene.

A. Specific knowledge, skills, and experience: Depending upon basic training, the industrial hygienist acquires advanced training in physical and chemical methods of analysis of working conditions (atmospheric contamination, noise, radiation) and in the engineering design of plants, processes, equipment, and special control measures, such as ventilation, or the elimination or minimizing of hazardous or deleterious working conditions.

B. Personal qualities: It is desirable that industrial hygienists have a keen sense for getting the facts and bringing them to light, a high sense of public responsibility, and the capacity to work with individuals and large groups.

C. Approximate time required: Twelve months, two semesters in academic work, and the balance of the 12-month period in field work with, perhaps, assignment to a qualified industrial hygiene service, official or otherwise, for practical training in industrial hygiene. Degrees suggested: Master of Public Health or Master of Science.* Further graduate study to include the doctorate is desirable in certain instances.

D. Type of institution best fitted to give such training: It is desirable that a considerable part of graduate training of industrial hygienists should be acquired jointly with industrial physicians. Such joint training is best provided in a graduate school of public health.

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* See criteria for the M.P.H. degree adopted by the Committee on Professional Education and approved by the Executive Board of the American Public Health Association, Nov. 8, 1948. (A.J.P.H. 39:230-232 (Feb.), 1949.)

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The Committee on Professional Education expresses grateful appreciation to the subcommittee which assisted with the preparation of this report. This subcommittee, which is identical with the Industrial Hygiene Section Committee, consists of:

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Kenosha Views Its Health Services

"Kenosha City and County Public Health Survey" is the culmination of two years of study of their health services by the citizens of Kenosha County. After the citizens, particularly those in the Community Health Council, asked themselves a number of questions about trailer camps, rubbish disposal, water supply, preparation of prospective mothers, school health services, and accidents, the Kenosha County Board of Supervisors, the Kenosha City Council, and the Kenosha Community joined in asking the State Board of Health for help in a public health and sanitation survey.

An executive committee representing the three organizations was set up and a large over-all citizens' committee of some 200 persons was created. There were five working groups—on administration, environmental sanitation, maternal and child health, preventable and chronic diseases, and accidents and safety. The survey was made by questionnaire, by house to house interview, by dental examination, and by examination of the diets of a sample of school children.

The completed report is divided into the five main subjects with a total of 46 subheads for each of which there are recommendations. Two over-all recommendations are made—that the Kenosha Community Health Council, as the logical agency "for implementing the recommendations of the survey," expand its membership to be truly representative of both city and county and of a large base of organizations. It was suggested that it might wish to deal with other problems and in effect be the nucleus of a Community Council, of which the existing council might wish to become the Health Division. The second recommendation is that the City Council and the County Board work out a mutually satisfactory program for giving services, particularly to the 20,000 persons outside the city, that are now lacking.

The State Board of Health reports numerous improvements already made as a result of the survey. A realistic salary for a medical health officer made it possible to select the best of five applicants. A qualified nursing supervisor has been appointed for the Health Department; milk, trailer, and rooming house ordinances were passed by the City Council; rural parents are increasingly taking their children to dentists; and the public schools are making a health curriculum study.

The study is available from the Wisconsin State Board of Health, Madison.

The Future of Cardiac Research

"Temples of the Future: A Story of Heart Research" assumes that the public will still read something beyond the level of the comic book or the "sob" story. It is well written, scientifically accurate, extensively illustrated with photographs of actual laboratory processes. Its theme is the common, shared responsibility for research of the scientist who carries it out and the non-scientist who benefits by it and whose financial support maintains it. The title is from Pasteur who named research laboratories "the temples of the future." American Heart Asso-

ciation, 44 East 23rd Street, New York 10, N. Y.

National Health Forum "Highlights"

The literary fruits of the 1954 National Health Forum of the National Health Council have now appeared as "Highlights." Into about 100 pages have been distilled the discussions on "Changing Factors in Staffing America's Health Services" that took two days in numerous large and small groups. It is an outstanding job of selection, condensation, and effective writing. Its anonymous architect is Josephine Nelson, who was on the council staff as public relations director for the forum.

The need for recruitment and training of personnel to meet critical shortages of public health personnel has been a continuing problem since the post-depression era, but that new and challenging ideas beyond the periodic lamentations came out of this forum is indicated by its first tangible fruits, e.g., Operation Health Careers Horizons (A.J.P.H. 44:908 (July), 1954). The National Health Forum has established itself as an important and continuing feature in the national public health scene. Reading the 1954 "Highlights" will show that this is not without good reason. National Health Council, 1790 Broadway, New York 19, N. Y.; 75 cents.

The Growing Health Center Idea

The year-old quarterly, "Public Health Views," of the Philadelphia Department of Public Health, attempts "to review a maturing health center program." The district health center organization of New York, Los Angeles, and Philadelphia are summarized; five double-spread pages of photographs showing health center activities are included, as well as a discussion of the health center program as it relates to children. The labor health center as illustrated by Philadelphia's Sidney Hillman Medical Center is described. "Views" continues to be competently and attractively produced in the department's Bureau of Public Information and Service, whose chief is Harold F. Schneidman. Editor is Gustav Gumpert. Public Health Views, 619 City Hall Annex, Philadelphia 7, Pa.

The Policeman Meets Abnormality

To help law enforcement officers "know a good bit about what makes people 'tick,'" the Louisiana Association for Mental Health has published a manual for the police officer. It is called "How to Recognize and Handle Abnormal People" and has been prepared in the interest of better police officers. Says the introduction to its audience, "The more you know about what makes men do the things they do, the more trouble you will be able to prevent." Its authors are Robert A. Matthews, M.D., chairman, Department of Neuropsychiatry, Louisiana State University School of Medicine, and Loyd W. Rowland, Ph.D., director, Louisiana Association for Mental Health, 816 Hibernia Bldg., New Orleans 12, La.; 65 cents.

Worth Acquiring

"The Ear of the Beholder" has for its text that "no words of wisdom, however cogently expressed and vehemently spoken, can ever find their mark unless they are heard and understood." Thus it explains why the New York State Department of Mental Hygiene uses comic books, puppet shows, and similar media to teach the principles of good mental health. Five years of an educational program are summarized—a program speaking the language of the man on the street and using ideas he

can grasp and accept. In other words, this is the story of how "Blondie," "The Haunted House," and other popular presentations have carried out their role of making popular—and understood—the principles of good mental hygiene. The author is Margaret M. Farrar, director of mental hygiene publications and public relations, New York State Department of Mental Hygiene, Albany.

"I Was A Very Sick Man—but I didn't know it" is a pamphlet of the National Committee on Alcoholism. It is designed "for all who want to understand alcoholism and what can be done about it." By way of narrative and pictures, it is the story of how one man was helped back to health through new resources. It should be valuable to those dealing with alcoholics —both potential and actual—in emphasizing once more that alcoholism is a disease and that it can be cured by using all the available resources at hand. Treatment that "relies on sympathy and professional knowledge rather than shame and moral judgment" is the keynote. National Committee on Alcoholism, 2 E. 103rd St., New York 29, N. Y.; 50 cents. Quantity discounts for physicians, clergymen, and organizations.

Effects of breakfast habits—The Cereal Institute offers free copies of a booklet entitled, "A Resume of the Findings of the Iowa Breakfast Studies," which describes the effects of altered breakfast habits. The experiments were conducted jointly by the Departments of Physiology and Nutrition at a medical school. Cereal Institute, Inc., 135 South La Salle Street, Chicago 3, Ill.

"Standards of Design: Housing for the Elderly"—Discriminating print and attractive illustrations are so rare in official documents that the Massachusetts Housing Board is to be doubly congratulated on this publication. These pioneering standards for noninstitutional housing projects were established to implement a State Public Housing Act of 1953. Design criteria for apartments, buildings, and sites were developed to assist the designer faced with the challenge of "an entirely hypothetical and theoretical tenant who is at one and the same time completely healthy, and ridden by a variety of characteristic ailments." Certain minimum standards which must be maintained for all housing are included as mandatory specifications. Massachusetts State Housing Board. Boston. Copies may be obtained from the board.

"Readings on Sex Education" has been prepared by the Section on Mental Growth and Development of the American Academy of Pediatrics as a help to the physician in guiding parents in sex education of the child. It expresses the "belief that sex education is primarily a function of the home and the family circle and should be integrated with all other areas touched by the boundless curiosity of the growing child." Five books or pamphlets for parents are listed; eight for children, together with publisher and price. American Academy of Pediatrics, 610 Church St., Evanston, Ill.

"Giver's Guide to National Philanthropies, 1954–1955," published by the National Information Bureau, indicates the basic standards on which philanthropic organizations are accredited by the bureau. In addition it lists, with a brief description of purpose, officers, and current annual expenditures of 52 typical accredited agencies. National Information Bureau, 205 East 42nd St., New York 17, N. Y. Copies for distribution, $6 per 100.

Books and Reports

All reviews are prepared on invitation. Unsolicited reviews cannot be accepted.

William H. Welch and the Rise of Modern Medicine — By Donald Fleming. Boston, Mass: Little, Brown (34 Beacon St.), 1954. 216 pp. Price, $3.00.

Two bachelors who probably never saw each other exerted a tremendous influence on American medical education and research. One was the Baltimore merchant, Johns Hopkins, whose will and millions brought forth the university, the hospital, and medical school bearing his name. The other was William H. Welch, who brought to Johns Hopkins University the creative tradition of German science, and who stayed a half a century to build and shape, with others, its medical tradition and destiny. It is author Fleming's thesis that Welch became "the chief Influential in American medicine," and his account of the evidence makes good reading.

Welch died in 1934, and this is his second major biography. The present volume is briefer and less intimate than the Flexners' biography of 1941, but Fleming has tried to "recheck Welch's career from the primary sources," and has come up with an excellent short history of American medical education since the 1880's and of Welch's towering influence in it.

Third in a line of Connecticut physicians, Welch had little inclination to practice medicine. But he with Osler and Mall brought about "a massive displacement of the center of gravity in the teaching of medicine in America, from memorizing to understanding, from reading and listening to seeing and doing." In building this kind of medical education Welch was "the maker of something altogether new and not the mender and patcher of something old."

The Welch story is a part of our tradition and inheritance in medicine and public health. Fleming tells it well.

HAROLD M. CAVINS

Group Work in Community Life— Edited by Clyde E. Murray; Marx G. Bowens; and Russell Hogrefe. New York: Association Press (291 Broadway), 1954. 245 pp. Price, $4.75.

This volume is an extremely readable book which will give to health workers a new appreciation of the role of the group worker and the agency in the community in helping both individuals and groups to take their places in constructive social action. The case stories give in surprisingly nontechnical language a picture of group work as a flexible method of helping people to resolve problems—a technic applicable to the solution of health problems.

The material is logically arranged and practical, making it possible to select the sections which give suggestions for or parallel one's own problems. It would be a useful source book for students and an admirable book for volunteers anxious to learn more about the group work technics. Since the range of experience is wide, some situations are less interesting than others, but the first and last chapters are full of material worth study.

There is a wholesome philosophy in each of the illustrations that points up the purpose of group work to prepare people for a more active part in community organization, with emphasis on its work with individuals and small

groups. Since health work is so often dependent on the coordination of many groups in the community, a better understanding of the contribution of the group worker in helping to take responsibility in the larger community should lead to the cooperative approach essential in meeting community needs today.

EDITH M. GATES

Techniques of Tuberculin Testing and BCG Vaccination—U. S. Department of Health, Education and Welfare, Public Health Service Publication No. 182. Washington, D. C.: Gov. Ptg. Office, 1953. 44 pp. Price, $.55.

This is a detailed manual covering the technics used and the materials necessary for tuberculin testing by the Mantoux method, and BCG vaccination by both the intradermal method and the multiple puncture method. Instructions given are specific, detailed, and comprehensive. There are numerous illustrations—some in color—to illustrate the points made.

In addition to a brief bibliography, the appendix contains an unusual but very helpful list of the reasons for using the recommended equipment and materials.

This manual should be required reading for everyone who does or contemplates doing tuberculin tests or BCG vaccinations. It should also be extremely helpful as a teaching aid in schools of medicine and nursing.

FLOYD M. FELDMANN

Paying for Medical Care in the United States—By Oscar N. Serbein, Jr. New York: Columbia University Press (2960 Broadway), 1953. 543 pp. Price, $7.00.

This is an exorbitantly expensive, highly mechanical compilation of much, but not all of the significant, already available data on payments for medical care. The report purports "to bring together pertinent information on methods of paying for medical care, to evaluate these methods, and to consider their potential." Materials from the Committee on the Costs of Medical Care (1928–1931) through current reports of operating agencies are included, with an undue reliance on secondary sources of information. Interested persons may therefore find this text a readily available source of a large amount of information which is only partially summarized in other current references.

However, workers in the health fields will find much to question in this text. There are a number of technical errors—such as in the date of the founding of the Public Health Service or in the name of the National Tuberculosis Association. Part of the book is devoted to an uncritical discussion of matters of health as such. The sections devoted to future developments and to evaluation of current plans are replete with inconsistencies, based primarily on a lack of any clear distinction between the economic and health functions of the various devices for payment for medical care services. A section on problem areas consists of a minimum of data and a number of conclusions concerning the aged, the indigent, the unemployed, the rural population, employees of small firms, and the need for auxiliary services and dental care—all in ten pages. The routine clichés concerning the difficulties of approaching these areas are simply repeated.

A lengthy section on the role of government in present payments for medical care duplicates information quite readily available from a number of other sources. Many of the tables in the text and its appendix consist of long lists of rapidly dated information as to how many prepayment plans include stated benefits. The author makes no claim that the sample of plans from which these data were drawn is necessarily representative!

One might have anticipated that the expenditure of $92,000 for the services of an economist-statistician would have been evidenced in the presentation, analysis and interpretation of data on the place of different methods of payment for medical care in the over-all national economy and on the reciprocal relationships involved. No mention is made of this subject area. Despite mention of the fact that an estimated 70 per cent of the consumer medical bill is paid from income and savings, there is no presentation of the available data concerning the part of income represented for different groups—or what this amount buys. These are certainly problems which fall within the competence of the field represented by the author and they are basic areas for consideration in any discussion of payment for medical care.

It is to be hoped that this book will not discourage the preparation of a needed report pulling together all available material on the methods of paying for medical care, relating them logically to the health of people and of the economy. JONAS N. MULLER

A Follow-Up Study of the Results of Social Casework—By Leonard S. Kogan, J. McVicker Hunt, and Phyllis F. Bartelme. New York: Family Service Association of America (192 Lexington Ave.), 1953. 115 pp. Price, $2.50.

The Family Association of America presents another book dealing with an evaluation of social casework. This study of 38 families is carried out five years after the work with the families was discontinued and proved to be too long a time to be economically feasible with a large sample of clients. The purposes of the study were: (1) to determine whether and in what form and to what degree the effects of casework services were discernible; (2) to obtain empirical data testing the validity of the measures of change in clients which were previously devised; and (3) to learn the advantages and disadvantages of the follow-up procedure.

To obtain systematic evidence the interviewer covered a range of general topics or questions for each individual, but freedom to express himself was permitted the client through a relationship established between the interviewer and the client. The validity of the measures of change required that the interviewer be without the knowledge of both the casework process and the amount of change in the family. The purposes of the study required more extensive and detailed interviews than are usual in public opinion polls. The areas covered were: (1) a description of how the various members were getting along; (2) what had happened since the termination of help from the agency; (3) what the clients recalled of their casework experience; (4) whether casework had helped and if it had, why, and if not, why not.

A careful method analyzing the valuations made by the clients was established, and these were measured against movement judgments and the Distress-Relief Quotient established on the same cases in a previous study.

The results showed among other things that the families could be located after five years, but it was expensive and time-consuming; that the clients did not resent the interview, which was held without prior preparation; that the majority of clients placed a high positive value on the help they had received from the caseworkers; that an experienced caseworker can predict to a significant degree evaluative attitudes and subsequent change in the client on the basis of the case record material; that gains made during casework on the whole were sustained, indicating a strong implication of a causal relationship between the general gains shown by the client and casework services.

This is an interesting method of evaluating casework service. It is presented with thoroughness and frankness and is suggestive to other disciplines wishing to analyze the results of services to individuals or groups. It is to be commended for the soundness of its research method. ELIZABETH P. RICE

Food Selection and Preparation—By Marion Deyoe Sweetman and Ingeborg MacKellar (4th ed.). New York: Wiley (440 Fourth Ave.), 1954. 645 pp. Price, $6.50.

The first section of this book deals with the five factors used by the authors in appraising foods—nutritive quality, digestibility, sanitary quality, palatability and economy. The second section gives a review of the general technics of food preparation and preservation. The structure of foods and the role of the structure in food preparation are considered in the third section. The fourth section (about two-thirds of the book) discusses the problems of selection and preparation of the various classes of foods. The chapters in the fourth section deal with structure and composition, appraisal of the different forms (fresh, processed in various ways) according to the five points discussed in section one, and factors to be considered in applying the technics of food preparation to that particular food or class of foods. These chapters conclude with an outline summarizing the major points covered. This seems a very good feature, as it highlights the essentials briefly.

Appropriate literature references are given with each chapter. While not extensive, the lists are well selected and serve to introduce the reader to the variety and complexity of the literature pertinent to the foods field. The book concludes with an appendix listing food values in common portions, and a good index.

This is a very well written book. The arrangement is considerably improved over that of the third edition. The discussions are clear and logical, and the selection of items for emphasis seems excellent. The coverage of any one topic is necessarily brief, but the points of most importance at the elementary level have been included. The book is written for use as a text in elementary college courses in food selection and preparation. The arrangement should permit its use in courses of differing types, as the discussions of the various points of view are clearly separated. In addition to its textbook uses, this book should be valuable to anyone desiring a basic elementary reference in the field of food selection and preparation, since it brings together in logical order all the more important points which should be considered. For those unfamiliar with previous editions, this is not a cook book, being concerned with basic principles. A knowledge of elementary chemistry would be helpful but is not necessary for reading this book.

PAULINE C. PAUL

Wonders of Modern Medicine—By Steven M. Spencer. New York: McGraw-Hill (330 West 42 St.), 1953. 276 pp. Price, $4.00.

This book presents the "wonders" of modern medicine without falling into the pitfalls of melodrama. It reviews 20 stories of recent medical advance with a care that reflects scholarship. Many of these stories have appeared previously in a national magazine but now have been revised and collected into this volume.

In addition to describing new horizons on disease entities such as heart disease, cancer, tuberculosis, epilepsy, and arteriosclerosis, Mr. Spencer has reported contributions, usually journalistically overlooked, in the areas of physiology, pharmacology and biochemistry, e.g., plastic resins for edema, radioactive isotopes and gamma globu-

lin. Each presentation parsimoniously selects and depicts the links in the chain that have led to an advance. Fortunately, the author does not get lost in research laboratories or hospitals but also has the perspective to see how the public itself has both positively and negatively affected the advance of medical science. The book definitely gives the feeling that the attack on disease is a social movement, more than a series of stellar performances by individuals.

This book will not only be a meaningful reading experience to the lay public but will help many in the health professions obtain an overview of the growing edge of our work.

WILLIAM G. HOLLISTER

How to Be a Woman—By Lawrence and Mary Frank. New York: Bobbs-Merrill (468 Fourth Ave.), 1954. 144 pp. Price, $2.75.

This book is made up of six sections—Girlhood; The Young Woman: 20 to 40; The Busy Years; The Growing Child; The Middle Years: 40 to 55; The Later Years: 55 On—addressed in the second person to girls or women in those general age periods. Within each of these sections there are subchapters dealing with some of the particular problems most likely to emerge within that time period.

The total scope of the book, then, gives a hasty view of woman's life from her first ten years right up to "55 On" where she is seen considering "retirement," "restrictions," and "widowhood." The authors make it plain in the introduction and throughout the entire book that they are trying to show the continuity of the feminine life pattern, as they say, "to show you that what you did yesterday becomes part of yourself today and an influence on tomorrow," and that "life is a series of turning points, or transitions, and that each of them offers . . . the opportunity to change, to build anew, to benefit by our experiences, to learn from our mistakes and thereby be better able to meet tomorrow."

This book might be helpful with groups working with girls or women of diversified age groups, where one needs to keep in mind the special characteristics of each age period and the relationships of all the age periods to each other. For an individual reader at any given age, it would seem less useful, for when the book is approached from the standpoint of such a reader—especially one with a specific problem—the coverage offered seems rather slight.

The audience to whom the book is addressed somehow never seems quite clear. This is not only because the six different sections are addressed in the second person to six different age groups, but within the age groups there seems to be some confusion from time to time as to the sophistication of the reader—occasionally resulting in a presentation too naive for a sophisticated reader, and yet too involved, and perhaps even anxiety-producing for an unsophisticated reader.

Nevertheless, this book may prove a useful tool to assist people working with groups of women and girls, especially where the book can be used as one part of an individualized counseling approach.

PAULINE G. STITT

Administrative Medicine—Transactions of the First Conference. New York: Josiah Macy, Jr. Foundation (565 Park Ave.), 1953. 176 pp. Price, $3.00.

This little book is a verbatim report of a three-day conference that was called by the Josiah Macy, Jr. Foundation in March, 1953. The conference was arranged "in recognition of the fact that the maintenance and improvement of the physical and mental health of its people are among the primary responsibilities of any nation." The list of invited participants contains the names

of 18 or 20 men who are foremost in America in the broad field of administrative medicine. Dr. Hugh R. Leavell was chairman of the group. The participants represented health insurance programs, the Public Health Service, the American Medical Association, schools of public health, state health departments, voluntary health organizations, etc. The meeting had no agenda and no planned program. No conclusions were reached and no resolutions passed. It was simply an informal meeting of persons who are vitally interested in medical administration, in order that they might discuss common problems.

The report is interesting in that it presents, in an informal way, the various points of view of men who have their diverse interests, varied experiences, and special biases. As in any other verbatim report, the actual discussion must have been much more interesting to the participants than is the report to the reader. As a document, however, the report has real value. WILSON G. SMILLIE

Home Accident Prevention, Proceedings of the First Conference on January 20, 21 and 22, 1953. Ann Arbor, Mich.: University of Michigan Press, 1953. 148 pp. Price, $1.00.

The various lines of recognition that home accidents are a public health problem converged in the First Conference on Home Accident Prevention held January, 1953, at the Michigan School of Public Health. This conference was a joint effort of the school, the National Safety Council, the U. S. Public Health Service, the Committee on Accident Prevention of the American Public Health Association and the W. K. Kellogg Foundation. The last named has also made possible the publication of a volume of proceedings and its sale at a nominal price.

Corresponding to the four work groups of the conference, the volume is divided into four sections—Facts, Figures and Findings; Personal and Environmental Factors in Home Accidents; Health Department Responsibility, Resources, and Experience; and Utilization of Community Resources. Each has a series of appendixes in which are given numerous illustrations of the facts outlined. In the appendix for the section on Health Department Resources, for example, are described home accident prevention projects in 11 health departments in seven states.

With this volume as a guide no health department should be bereft of ideas as to what part it can have in a community home accident prevention program. Its responsibility would appear to be inescapable. MARTHA LUGINBUHL

The Conquest of Plague—By L. Fabian Hirst. New York: Oxford University Press (114 Fifth Ave.), 1953. 478 pp. Price, $11.00.

Few readers of this book will be disappointed, regardless of whether interest is stimulated by the title, the subtitle, "A Study of the Evolution of Epidemiology," or by a combination of both.

The true significance of the title will be found in the last sentence of the conclusion: "Victory over man's most ancient and most deadly enemy seems now to be at last in sight." The reasons for the caution in this statement will be found throughout the text. They are particularly emphasized in the discussions on the inherent dangers of wild rodent plague, as well as in the comments on rat-borne plague, its history in Europe, and the theoretical possibilities of its recrudescence there.

However, Hirst's basic mission was not to provide a detailed account of the history of plague, but to present the impact of this major epidemic disease upon the evolution of the science of epidemiology. The first clue to this intent is revealed by the subtitle; others

are to be found in the descriptive foreword by Macarthur, in the preface, and in the first chapter.

Hirst has most certainly achieved his primary hope of having prepared a volume "useful to young investigators of the present and the future as a general introduction to the study of the most dreaded of all the major epidemic diseases." Most important of all, he has done so in an orderly and scholarly manner. VERNON B. LINK

An Introduction to Laboratory Technique in Bacteriology—By Max Levine (rev. ed.). New York: Macmillan (60 Fifth Ave.), 1954. 413 pp. Price, $4.50.

Evolved during nearly thirty years of laboratory and teaching experience of one of our well known, productive bacteriologists, this manual has been tested and molded through wide use by practical and critical teachers. This third edition has been brought abreast of modern advances. Nomenclature follows the 1948 Bergey's Manual. Numerous references to recent technological advances are cited, including recent editions of such guides as the APHA and SAB manuals. With perhaps cynical acknowledgment of the progress (?) of civilization, "In view of the possibility that, in a serious emergency, the valuable dehydrated digests and prepared culture media might become unavailable, an exercise is included for preparation of digests (which may be used as a base for compounding culture media) from locally available materials." Such an exercise is highly instructive in any case.

The exercises are brief, practical and well within the scope of any college laboratory. They are arranged and listed in eight categories: (1) methods of sterilization, (2) staining, (3) preparation of media, (4) cultural characteristics, (5) physiological and biochemical properties of bacteria, (6) effects of environmental factors, (7) enumeration of bacteria, (8) agglutination and its uses; supplementary exercises on water, food, etc. There are 85 "basic" exercises covering all fundamental considerations, and 37 "optional," more advanced and specialized exercises. There are far more exercises than any student will perform. This permits variation of experiments for different sections or terms. Many exercises are especially designed for certain vocational groups, as home economics students, etc. Especially useful features are specific page assignments in several standard textbooks for fundamental exercises; lists of equipment and cultures; tables of solutions, standards, dilutions; methods and reagents for various tests, stains, media; simplified dichotomous keys for identification of common bacteria; glossary of terms. Everything any instructor of elementary bacteriology can need in a laboratory manual is here. This manual differs from many in being bound in cloth and printed like standard textbooks. Indeed, it contains much "every-day" reference material worth keeping handy on the bookshelf long after the course is over.

MARTIN FROBISHER

The Story of Nursing—By Bertha S. Dodge. Boston, Mass.: Little, Brown (34 Beacon St.), 1954. 243 pp. Price, $3.00.

This small book is a surprise and a little difficult to classify. It is not fiction, it is not a history, it is not a typical career book, yet it manages very successfully to convey the true spirit of nursing and to interpret the profession as few nurses have been able to do. It is written by a non-nurse.

Mrs. Dodge has elected to tell some of the stories of some of the people, events, and scientific discoveries which have had a strong influence on nursing. She selects well, even dramatically; she writes easily and gets close to nurses

and their jobs; but what is most important is that she makes nursing attractive. It seems to me that this is a book which should be reassuring to the parents of would-be nurses, which would interest career-seeking girls and make those of us already in the ranks glad and humbly proud to be there.

One more chapter telling of the fast developing opportunities for well prepared nurses to serve on the world-wide scene would have enriched and rounded out this sympathetic and moving portrayal of our profession. Thank you, Mrs. Dodge. DOROTHY DEMING

The Public Health Inspectors' Handbook (formerly The Sanitary Inspectors' Handbook)—By Henry H. Clay, assisted by Ronald Williams (8th ed.). London: H. K. Lewis (136 Gower St.), 1954. 608 pp. Price, 30s.

This revised and enlarged edition of Clay's Sanitary Inspectors' Handbook appears under a new title in accordance with the recommendations (not yet in effect), of a "working party" that the designation of sanitary inspector be changed to public health inspector. Titles in the text have not been changed, however.

Reviews of previous editions, first published in 1933, have appeared in this Journal in 1951, 1947, and 1943. As noted previously, this is a handbook, in its true sense, of the acts, statutes, and by-laws for which the sanitary inspectors in England, Scotland, and Wales have responsibility. It is limited in its discussion of the principles underlying many of the requirements set forth. However, as a text and training manual for beginners, and as a reference source to assist the sanitary inspector with his technical and legal problems, it is without equal in this country. This reference covers a much broader range of practice than we normally consider to be within the scope of environmental sanitation. Although not directly applicable, much of the subject material should be of interest to public health personnel in the United States.

In this edition, every chapter has been revised, and much new matter has been added. The authors report that the index now consists of over 4,000 references. There are 101 illustrations, and a glossary of building terms.

A review of this book in the May, 1954, issue of "The Sanitarian" (the official journal of the Sanitary Inspectors' Association) concluded as follows: "Clay's gives the student something of everything, and helps him to find the rest." RICHARD G. BOND

Amebiasis—By Ernest Carroll Faust. Springfield, Ill.: Thomas (301–327 East Lawrence Ave.), 1954. 154 pp. Price, $4.75.

This volume is well written and based on the author's extensive experience with many aspects of this infection both at home and abroad. It is quite comprehensive despite the fact that the text covers no more than 120 pages. The 19 pages of references constitute a distinct asset and the comprehensive indexing on the last 14 pages is effective.

The factual information is clearly and accurately set forth. However, there is room for differences of opinion on the significance of some of the observations. It is particularly interesting to note the stress on the examination of food handlers as a public health measure (pages 111–113) in view of the fact that committees of the American Society of Tropical Medicine, the Public Health Service, and the State and Territorial Health Officers have all after careful study urged that this is probably a waste of energy. Under differential diagnosis (pages 91–92) the scope of that problem is indicated, but the attending physician will find little to help him in his dilemma.

It is perhaps unfortunate that per-

manent fecal preparations (page 84) and culture technics (pages 85–86) are indicated as useful diagnostic tools but the interested reader, thereafter, is referred to other works for the procedures involved. The reviewer was sorry to find, at least in the copy available to him, that the colored plate between pages 80 and 81 was not bound in the volume.

The physician, health official, investigator, and laboratory worker interested in amebiasis will find this volume instructive, stimulating, and well documented. GILBERT F. OTTO

Proceedings of a Conference on the Utilization of Scientific and Professional Manpower — By the National Manpower Council. New York, N. Y.: Columbia University Press (2960 Broadway), 1954. 197 pp. Price, $3.50.

This book is a report of the thinking of a group of leaders in the fields of education, engineering, industry, government, medicine, and science, who met in the fall of 1953 to discuss the utilization of scientific and professional manpower. It defines some of the general areas of manpower shortage and discusses the major problems related thereto. The discussion of the very basic question as to whether a planned program of utilization of manpower is appropriate to a market economy will be found extremely stimulating and provocative.

A major section of the report is devoted to specific consideration of the shortages of personnel in engineering, medicine and teaching, and of possible remedies. Re-examination of recruitment and training policies is suggested, but prime emphasis is placed upon the more effective utilization of available professional personnel. In the fields of medicine and public health the need for a critical evaluation of the job components of professional personnel is stressed in the expectation that some of these activities might be assumed by technical, paramedical workers.

Students of public health and medical care, who long have been concerned with the problems of personnel shortage, will find in this book an interesting account of many of the problems as well as occasional guideposts pointing to avenues of possible solution.

EDWARD W. COHART

Professional Nursing Trends and Relationships — By Eugenia Kennedy Spalding (5th ed.). Philadelphia, Pa.: Lippincott (East Washington Square), 1954. 636 pp. Price, $5.00.

This fifth edition of the author's ever-useful reference and textbook is practically a new book. While adhering to its original purpose of 15 years ago, it has grown and now again offers much that is of significance and importance to nurses in all stages of their service. There are new chapters dealing with the national and world-wide events which have influenced nursing and a welcome description of the reorganization of the national nursing groups at headquarters. It is richly documented throughout and presents endless opportunities for intensive study of the many pressing problems facing nursing today. In fact, it would be a highly useful book for any group of nurses wishing to catch up on nursing trends and relationships in an informal study course. It is, therefore, a little surprising to find that Mrs. Spalding describes the book as written for "senior students in basic programs in nursing, graduate nurse students in supplementary programs and graduate programs in nursing, and by the lay public." The professional nurse wherever she is will find much that is personally and professionally informative, while the lay public would have to dig deep and work hard to gain much from reading the book—

that is if one interprets the term lay public to mean the average nonmedical, non-nurse readers.

DOROTHY DEMING

Auditory Disorders in Children. A Manual for Differential Diagnosis—By Helmer R. Myklebust. New York: Grune and Stratton (381 Fourth Ave.), 1954. 367 pp. Price, $6.00.

Public health nurses, physicians, and social workers must read this book to prevent future errors in counseling and handling preschool children who do not hear or talk. In his introduction the author issues the warning that failure of a child to respond to an auditory stimulus does not mean he does not hear. He calls on pediatricians, otolaryngologists, audiologists, child psychiatrists, clinical psychologists, speech pathologists, and educators to use the instructions in this manual. He suggests that only by teamwork of all these experts can diagnosis be accurate, and he urges each specialist to maintain a respect and an open-mindedness toward the findings of those in related fields.

Three parts of the book outline separate essential steps in diagnosis. Differential history taking must be part of the total examination: each diagnostician must be responsible for his specialty. Alertness and probing for important cues to be used in diagnosis are emphasized. These initial findings are then integrated with step two—clinical observations and evaluation of behavioral symptomatology. From his years of experience as a clinical psychologist working with exceptional children and by evaluating the behavior of 228 children who had been referred to a children's hearing and aphasic clinic, the author has systematically organized the behavioral symptoms of these preschool children into four groups: peripherally deaf, aphasic, psychic deafness, and mental deficiency. In the third step, examination methods and procedures, unique original tests, and adaptations from numerous clinical technics are described.

The fifth part includes case studies that illustrate the application of history, behavior symptoms, and clinical testing to a clear-cut classification of the four types of children with auditory problems.

The many tables in the book are an epochal contribution to original research on the inner language and symbolic problems of the exceptional child and may well point to the mental process of the normal child during his developmental years. Through this manual, teamwork of all specialists may prevent secondary problems that might handicap the misunderstood child still further, making his condition less remediable. This manual serves as a guide to a new fascinating field of research. The author has systematically organized where he could and has offered logical and imaginative suggestions for future investigation.

WARREN H. GARDNER

La Solidaridad de las Américas ante la Salud—By C. E. Paz-Soldán. Lima, Peru: Biblioteca de Cultura Sanitaria del Instituto de Medicina Social de la Universidad de San Marcos, 1954. 316 pp.

In this book, Dr. Paz-Soldán relates his experiences and participation in several Pan American congresses, including the Sixth Sanitary Conference of the American Republics in Montevideo in 1930, the Third American Child Conference, and the First American Congress on Leprosy in Rio de Janeiro in 1922, the Conference on Maritime Quarantine in Panama in 1924 and the Inter-American Congress of Hygiene in Havana in 1952. He also describes some of his activities directed toward the establishment of better cultural relations between medical schools in Latin America. Several of

his speeches in these congresses and before medical school faculties have been included in the book.

The main theme throughout is the great value of cooperation between the countries of the Americas in furthering the health of the people of this hemisphere. As one of the leaders in this movement during the last 30 and more years, and as an honorary member of the Pan American Sanitary Bureau, he delivered the opening address at the Inter-American Congress of Hygiene in Havana. In this address, he reviews the growth and development of the Pan-American Sanitary office, pointing to it as a symbol of the solidarity of the American Republics in the field of health.

In describing the congresses in which he participated, Dr. Paz-Soldán presents us with a vivid description of the proceedings and a summary of the achievements. He portrays some of the leaders in the public health movements of the Americas in the early twenties and relates some of the interesting incidents in which they were involved. GUILLERMO ARBONA

Plague—By R. Pollitzer. World Health Organization Monograph Series, No. 22. New York: Columbia University Press (2960 Broadway), 1954. 698 pp. Price, $10.00.

This monograph, designed "to be of real assistance to workers engaged in plague research," presents the problem of plague as it exists in the world today. It contains a comprehensive review of data pertinent to the prevention and treatment of what has been one of the great epidemic killers of all times but which is now "both a normally curable and thoroughly controllable disease."

The year 1954 is the 60th anniversary of the present pandemic of plague which began in the Orient and subsequently spread throughout the world. It is with the beginning and end of these six decades that the author is particularly concerned, pointing out the early contributions which "laid a secure foundation for future investigations," and stressing the recent development of insecticides, rodenticides, and antibiotics as effective control materials.

Dr. Pollitzer's intimate knowledge of his subject stems from the experiences of a lifetime dedicated largely to combating this epidemic disease. In preparing this monograph he has provided an extremely valuable book, not only for research workers, but for others who are concerned with efforts against this disease, regardless of their professional backgrounds or occupational interests. VERNON B. LINK

Educating the Sub-Normal Child—By Frances Lloyd. New York: Philosophical Library (15 East 40th St.), 1954. 148 pp. Price, $3.75.

Concomitant with the expanding interest in the education and care of children with mental retardation is the merit of re-examining the objectives and methodology in providing for these children.

Miss Lloyd has indicated her positive views on the value of education for the "educationally sub-normal" (I.Q.'s 45–75) and has expressed some realistic plans for working with young children who are mentally retarded.

Her program, as she describes it, is based on a belief that education is the process of coordinating the whole personality and directing its powers toward adjusting the child to his environment. To the author, the acquisition of academic skills is subsequent to the child's personal and social adjustment, and the "success" of the program need not be dependent upon the child's learning to read. However, some useful technics for teaching reading and arithmetic are included in this volume.

The description of the school's responsibility for social training reveals

a sensitivity and understanding of children—especially those who deviate—and their parents. This insight is further noted in the author's case studies of "misfits" in the special program.

It should be noted that this book is not the scientific product of a researcher, but rather an informal presentation of a devoted teacher's beliefs and experiences. However, the author's realism and her focus on the adjustment of the child who is mentally retarded should prove helpful to teachers, school administrators, and the parents of children with learning problems.

FRANCES PARTRIDGE CONNOR

Three Men: An Experiment in the Biography of Emotion—By Jean Evans with an introduction by Gordon W. Allport. New York: Knopf (501 Madison Ave.), 1954. 297 pp. Price, $3.75.

In some important respects this volume is unique as a contribution to abnormal psychology and psychotherapy. For many years medical students and social workers have been compiling case histories as an integral part of their professional activities. These have often been fragmentary, disconnected, and covering relatively short periods. Miss Evans, on the other hand, has had the insight and ability to bring together the salient elements in the personalities of "three men" over a considerable period of their lives and weave their sordid history into a vivid, compelling biography. Her style is lucid, clear-cut, and incisive, giving to us a faithful portrayal of the environmental and personal factors that have conditioned the lives of these unhappy and maladjusted men.

While Miss Evans does not attempt professional diagnosis and treatment, she does show clearly that juvenile delinquency, alcoholism, marital infidelity, and other social maladjustments are complicated and interwoven—with these three men their roots reach back into early life. One cannot upon reading this book but be impressed with the responsibilities of the home, school, church, and other social institutions in working out satisfactory solutions. These men, together with their brothers in psychopathic distress, are a challenge to our social, economic, spiritual, and even our public health resources of today.

RICHARD ARTHUR BOLT

Congenital Heart Disease: An Illustrated Approach — By Henry S. Kaplan and Saul Joel Robinson. New York: McGraw-Hill (330 West 42nd St.), 1954. 126 pp. Price, $12.50.

The authors have achieved their purpose set forth in the preface to this monograph to give a clear and brief indoctrination in the salient principles of differential diagnosis in a logical approach to congenital heart disease. The first portion of the book on orientation gives concise and well balanced evaluations of the various standard and special methods of investigation of the individual case. Written with the general practitioner in mind, the clarity of description on diagnostic procedures is to be commended, as well as the succinct chapter on general care and specific surgical treatment possible in various types of congenital cardiac anomalies.

The second section of the book presents as an atlas the more common types of malformations. In each condition presentation is made through tabular form. Illustrations as to salient anatomic and physiologic factors, the clinical, radiological, and electrocardiograph features, as well as a consideration of special studies and possible surgical treatment, are given. This section suffers from the unfortunately poor quality of reproductions of the x-rays of heart and lungs. An

interesting feature is the side by side presentation of the x-ray and of a superimposed line drawing showing the presumed cardiac and vascular structures which are delineated in the individual film. This method, although possibly subject to minor errors, is quite helpful to physicians who may have limited background in the interpretation of cardiovascular roentgenography.

This monograph will serve a useful purpose among students and physicians in general practice who see cases of congenital heart disease relatively rarely and need a brief and clear guide in the evaluation and further management of the individual case.

JANET S. BALDWIN

Nutrition—By Margaret S. Chaney (5th ed.). Boston, Mass.: Mifflin (2 Park St.), 1954, 484 pp. Price $4.50.

The fifth edition of Nutrition maintains the basic style of previous volumes. For the most part, the field is approached from the dietetic point of view, i.e., sources and body needs for nutrients. There are only suggestions here and there of basic nutritional problems of the biochemical balance within the cell. The book logically could be entitled "Dietetics" rather than "Nutrition."

This is essentially a book for the student in the upper undergraduate classes who has had some, but not intensive, training in science. Nutrition is interpreted with a selected factual background. Although interpretations are conservative and accurate, this approach to the subject both defines and limits classroom use of the book. In this respect, certain portions, such as the detailed discussion of basal metabolism standards, are out of place and would only confuse an average undergraduate; yet the student who could use this discussion would find much of the rest of the volume elementary.

The book is written in polished and clear-cut English. It is readable but not exciting. Perhaps these qualities are desirable in a basic text but they do detract from student enthusiasm and interest. The format of the book is excellent. There is logical subdivision of material, clear-cut paragraphing, and the whole is emphasized by discrete use of bold face type, italics, suitable indentation, tables, etc. Illustrations are well chosen. There are well selected reading lists at the end of each chapter. Perhaps it is asking too much of the scientific writer, but it seems regretable that a book as basically sound and well organized could not also have the appeal of a more dramatic writing style.

MARGARET A. OHLSON

Books Received

Listing in this column acknowledges the receipt of books and our appreciation to the senders. Space and the interests of readers will permit review of some, but not all, of the books listed.

AFTER THE DOCTOR LEAVES. Marguerite Clark. New York: Crown Publishers, 1954. 310 pp. Price, $3.75.

AIR POLLUTION ABATEMENT MANUAL—CHAPTERS 1–12. Washington, D. C.: Manufacturing Chemists' Association, 1954. Price, $6.00.

AMERICAN MEDICAL ASSOCIATION: POWER, PURPOSE, AND POLITICS IN ORGANIZED MEDICINE. David R. Hyde and Payson Wolf. Reprinted from the Yale Law Journal, Vol. 63, No. 7, May, 1954. New Haven, Conn.: Yale University, 1954. pp. 938–1022.

ANTIBIOTIC THERAPY, PRINCIPLES AND PRACTICE OF. Henry Welch. New York: Blakiston, 1954. 699 pp. Price, $12.00.

BCG & VOLE VACCINATION. K. Neville Irvine. London, England: National Association for the Prevention of Tuberculosis. 96 pp. Price, 12/6.

BIOCHEMISTRY OF CANCER. Jesse P. Greenstein (2nd ed.). New York: Academic Press, 1954. 653 pp. Price, $12.00.

CARE OF THE LONG-TERM PATIENT, NATIONAL CONFERENCE ON. MARCH 18–20, 1954, Chicago, Ill. STUDY GROUP REPORTS, COMMITTEE IV RESEARCH. Baltimore, Md.: Commission on Chronic Illness, 1954. 154 pp.

CREATIVE RHYTHMIC MOVEMENT FOR CHILDREN. Gladys Andrews. New York: Prentice-Hall, 1954. 198 pp. Price, $4.75.

DOCTOR TO THE ISLANDS. Tom and Lydia Davis. Boston, Mass.: Little, Brown, 1954. Price, $4.50.

DONOVANOSIS (GRANULOMA INGUINALE, GRANULOMA VENEREUM). World Health Organization: Monograph Series No. 24. R. V. Rajam and P. N. Rangiah. New York: Columbia University Press, 1954. 74 pp. Price, $1.50.

ELEMENTS OF FOOD ENGINEERING. Milton E. Parker, E. H. Harvey, and E. S. Stateler (Vol. 3). New York: Reinhold, 1954. 241 pp. Price, $6.75.

GUIDE TO COMMUNITY ACTION. A SOURCEBOOK FOR CITIZEN VOLUNTEERS. Mark S. Matthews. New York: Harper, 1954. 434 pp. Price, $4.00.

HIGHLIGHTS OF THE 1954 NATIONAL HEALTH FORUM ON CHANGING FACTORS IN STAFFING AMERICA'S HEALTH SERVICES, MARCH 24–26, 1954. New York: National Health Council, 1954. 116 pp. Price, $.75.

THE HOG AND I. A FOOL-PROOF SYSTEM FOR CONTROLLING WEIGHT. Charis Miley. New York: William-Frederick, 1954. 93 pp. Price, $1.00.

HORMONES, HEALTH, & HAPPINESS. Warren Henry Orr. New York: Macmillan, 1954. 322 pp. Price, $4.50.

INVENTORY OF SOCIAL AND ECONOMIC RESEARCH IN HEALTH. New York: Health Information Foundation, 1954. 180 pp. Limited distribution.

INTERRELATIONS OF DEMOGRAPHIC, ECONOMIC, AND SOCIAL PROBLEMS IN SELECTED UNDERDEVELOPED AREAS. New York: Milbank Memorial Fund, 1954. 200 pp. Price, $1.00.

LET'S DRIVE RIGHT. Maxwell Halsey. Chicago, Ill.: Scott, Foresman, 1954. 496 pp. Price, $3.48.

MANUAL OF TROPICAL MEDICINE, A. Thomas T. Mackie, et al. (2nd ed.). Philadelphia, Pa.: Saunders, 1954. 907 pp. 304 illus. Price, $12.00.

MAN'S CAPACITY TO REPRODUCE. Joseph W. Eaton and Albert J. Mayer. Glencoe, Ill.: Free Press, 1954. 59 pp. Price, $2.00.

MAP—WORLD DISTRIBUTION OF RICKETTSIAL DISEASES TICK AND MITE VECTORS—BASIC SOURCES. New York: American Geographical Society, 1954. Price, $1.25 folded, $1.50 flat.

NEW DIRECTIONS IN SOCIAL WORK. Edited by Cora Kasius. New York: Harper, 1954. 258 pp. Price, $3.50.

NURSE AND CHRONIC ILLNESS, THE. Chicago, Ill.: Central Service for the Chronically Ill of the Institute of Medicine of Chicago, 1954. 55 pp. Price, $.75.

PARENT'S MAGAZINE BOOK FOR EXPECTANT MOTHERS. Adeline Bullock. New York: McGraw-Hill, 1954. 246 pp. Price, $3.75.

PROCEEDINGS OF THE SECOND RESEARCH CONFERENCE ON PSYCHOSURGERY. Public Health Service Publication No. 156. Fred A. Mettler, Chairman, and Winfred Overholser, Editor. Washington, D. C.: Gov. Ptg. Office, 1954. 116 pp. Price, $.75.

SOZIALHYGIENE-GRUNDLAGEN UND ORGANISATION DES GESUNDHEITSSCHUTZES. Erwin Marcusson. Leipzig, Germany: Veb Georg Thieme, 1954. 563 pp, Price, DM 20,—.

STUDENT'S GUIDE IN NURSING ARTS. M. Esther McClain (3rd ed.). St. Louis, Mo.: Mosby, 1954. 205 pp. Price, $3.00.

TREPONEMATOSES—A WORLD PROBLEM. WHO Publication. T. Guthe and R. R. Willcox. New York: Columbia University Press, 1954. 77 pp. Price, $.50.

UNMARRIED MOTHER IN OUR SOCIETY, THE. Sara B. Edlin. New York: Farrar, Straus and Young, 1954. 189 pp. Price, $3.00.

WHY WE BECAME DOCTORS. Noah D. Fabricant. New York: Grune & Stratton, 1954. 182 pp. Price, $3.75.

A Selected Public Health Bibliography with Annotations

Nurses vs. Population—If you have highly volatile opinions about the much-examined nursing shortage and the causes thereof, then you may be soothed by this illuminating analysis of the present situation. Even though your opinions may effervesce less vigorously than some others, the paper will be good for you—as will the graphs in the accompanying paper.

ARNSTEIN, M. Setting the Record Straight. Nursing Outlook 2, 6:297 (June), 1954.

Health of Body and Mind—Two discussions of ways to make employees healthy and happy are of wider applicability than merely to industrial groups. When all is said, employees are people and people have much the same health needs whether working or not.

BERRY, C. M., and EGGERT, W. A. Responsibility of the Professions in the Health Education of the Employee (two papers). Indust. Med. & Surg. 23, 7:301 (July), 1954.

Just for the Record—In a Winnipeg polio epidemic 1,403 contacts receiving gamma globulin experienced a (paralytic) case rate of 2.1 compared with that of 19.2 for contacts who did not receive GG.

CADHAM, R. G. The Poliomyelitis Epidemic in Winnipeg, 1953. Canad. J. Pub. Health 45, 5:185 (May), 1954.

Sketch of Accident Happening—Preventing childhood accidents is mostly a matter for adults—not only for parents, but physicians, and health department personnel—to take upon themselves. Statistically, the typical accident happens to a boy age five, playing on a porch, in the afternoon, who falls from a height and cuts his head. No mechanical factors are involved, and an adult is at fault.

DENNIS, J. M., and KAISER, A. D. Are Home Accidents in Children Preventable? Pediatrics 13, 6:568 (June), 1954.

Air-Borne Contaminants Chiefly—One way to get a sharp look at ourselves is to see what one of us has to say to our overseas colleagues. This time an industrial hygienist tells how things are with us—in that area of public health—and how they got the way they are. Our industrial insurances and insurance company inspection schemes are explained.

DRINKER, P. Engineering and Industrial Hygiene. Brit. M. J. 4875:1337 (June 12), 1954.

Old People in Britain—Always of interest is "how the other fellow does it." This is the story of what one (London) borough health department was able to do for 189 old people referred to it. One possibility discussed is "fostering" the aged—that is, boarding them out while they can navigate, and hospitalizing them when they cannot.

GRIFFIN, D. H., and WARREN, M. D. The Care of the Aged. M. Officer 91, 25:285 (June 18), 1954.

Successful Program, They Report—Though the Dupont Company medical services employ several psychiatrists, the main reliance seems to rest on AA to help the discovered alcoholic employees to climb out of their cups. In the past 10 years, a total of about 350 men (65 per cent of all alcoholics)

have been brought back successfully to productive employment.

HOGSHEAD, T. H. Problem Drinking in Industry. Arch. Ind. Hyg. & Occup. Med. 9, 6:526 (June), 1954

Antiviral Agents—Except for ornithosis, there is no antibiotic useful against the viral diseases, says the man who should know whereof he speaks. Certain compounds, he adds, have been come upon that do cure viral diseases in experimental animals. His revealing account will not be spoiled by attempting a necessarily inadequate mention of them here. This is one paper you will want to read unhurriedly.

HORSFALL, F. L., Jr. Chemotherapy of Respiratory Viral Diseases. Pediatrics 13, 6:593 (June), 1954.

The Most Studied Germ—If you fail to hunt out this particular issue of our sister association's house organ you will deprive yourself of a lot of satisfaction. In it is a notably clear account of the half-century search for a "cure" for TB. Not only will your comprehension of the nature of these brilliant researches be sharpened, but you will really enjoy this fine example of reporting for the benefit of the informed layman. Even a quiet chuckle may escape you.

LONG, E. R. Medical Research on TB. Nat. Tuberc. A. Bull. 40, 7:131 (July), 1954

Sobering Thought for the Day—"It is a sobering thought that the product of (old people's) manual labor is mostly good, whereas the results of (old people's) mental exertion may be disastrous. By the time the mental worker reaches retiring age he is often in a position of authority where his opportunities for doing ill are extensive . . . one might suggest therefore that retiring age for professional people should be compulsory . . ."

MACKINTOSH J. M. The Threshold of Age. Lancet 266, 6820:991 (May 15), 1954.

One More Statistical Club—Children from towns with drinking water containing fluorine to the tune of 3–4 ppm, 3–6 ppm, and 1 ppm were examined radiologically for any effects fluorine might have had on skeletal maturation. No evidence of adverse effect was found.

MCCAULEY, H. B., and MCCLURE, F. J. Effect of Fluoride in Drinking Water. Pub. Health Rep. 69, 7:671 (July), 1954.

Impressing Parents—A (North Carolina) county health department supervising public health nurse tells about the school health services in a rural county, pointing out who does what and revealing some of the whys. Some out-of-the ordinary services were worked out by the health department team of nurse, health educator, and sanitarian. Seemingly this is another of the good things that are said to come in small packages.

NICHOLS, D. W. A School Health Program in a North Carolina County. Nursing Outlook 2, 6:320 (June), 1954.

"Air, Water, Food and Shelter"—Nine dedicatory addresses at the opening of the Sanitary Engineering Center at Cincinnati extoll the past contributions of the sanitary sciences to the public health and foretell of the benefits to come. All nine addresses need greatly to be read, especially by those among us who envision the "new" public health as one chiefly of "social" services to the physically and mentally disadvantaged.

SCHEELE, L. A., et al. Control of the Environment for the Health of Mankind. Pub. Health Rep. 69, 7:626 (July), 1954.

Pudding Proof—Those who, for one reason or another, are disposed to doubt the validity of the relationships between cigarette smoking and lung cancer often call attention to the fact that physicians continue to enjoy their

cigarettes. Well, in Massachusetts a lot of doctors have stopped smoking. Among the many respondents to a questionnaire 15 per cent reported they had stopped, and they had done so because they thought the expressed relationship is valid.

SNEGIREFF, L. S., and LOMBARD, O. M. Survey of the Smoking Habits of Massachusetts Physicians. New England J. Med. 250, 24:1042 (June 17), 1954.

Eight Years of Infant Health—Can this be said of your city's maternal and child health services? "The same problems remain regarding overcrowding of clinics . . . long lines of patients waiting to be seen . . . little or no counselling of the patient . . . little or no attention paid to maternal nutrition, and little or no privacy afforded the patient . . . ." In your city what is the ratio of fetal deaths to live births? Has there been any reduction of incidence of premature births? Don't miss this brutally honest look into one city's improving infant health program.

WALLACE, H. M., et al. Trends in Maternal and Perinatal Mortality in New York City. J.A.M.A. 155, 8:716 (June 19), 1954.

Healthy Teachers—Most large city school departments (83 per cent responding to a questionnaire) report that a pre-employment physical examination is required of all school personnel. There seems to be a wholesome trend toward periodic re-examinations. In most instances the board pays the bill. Apparently not much is being done about the mental health of teachers—a state of affairs that would surely intrigue that overworked visitor from Mars.

WEBER, E. W. School Employees Examinations. J. School Health 24, 6:161 (June), 1954.

If additional information is desired regarding the articles listed in this Bibliography please communicate directly with the publication in which they appeared; the addresses are furnished for your convenience.

Arch. Ind. Hyg. & Occup. Med. (Archives of Industrial Hygiene and Occupational Medicine), 535 N. Dearborn St., Chicago 10, Ill.
Brit. M. J. (British Medical Journal), British Medical Association House, 19 Tavistock Sq., London, W. C. 1, England.
Canad. J. Pub. Health (Canadian Journal of Public Health), 150 College St., Toronto 5, Ontario, Canada.
Indust. Med. & Surg. (Industrial Medicine and Surgery), 605 N. Michigan Ave., Chicago, Ill.
J.A.M.A. (Journal of the American Medical Association), 535 N. Dearborn St., Chicago 10, Ill.
J. School Health (The Journal of School Health), American School Health Association, 3335 Main St., Buffalo 14, N. Y.
Lancet (The Lancet), 7 Adam St., Adelphi, London, W.C.2, England
M. Officer (Medical Officer), Whitefriars House, 72–78 Fleet St., London, E.C. 4, England.
Nat. Tuberc. A. Bull. (National Tuberculosis Association Bulletin), 1790 Broadway, New York 19, N. Y.
New England J. Med. (New England Journal of Medicine), Massachusetts Medical Society, 8 The Fenway, Boston 15, Mass.
Nursing Outlook, American Journal of Nursing Company, 2 Park Ave., New York 16, N. Y.
Pediatrics (Journal of the American Academy of Pediatrics), 301–327 E. Lawrence Ave., Springfield, Ill.
Pub. Health Rep. (Public Health Reports), Supt. of Documents, Gov. Ptg. Office, Washington, D. C.

Preliminary Program of the Scientific Sessions
82nd Annual Meeting
American Public Health Association
and
Meetings of Related Organizations
Buffalo, New York
October 11–15, 1954

All meetings will be held in the Memorial Auditorium and the Statler Hotel, except as otherwise noted in the program.

The Registration Desk will be in the main arena of the Memorial Auditorium, and will open for the registration of delegates at 9:00 A.M. on Monday, October 11, at which time final programs will be distributed. Early arrivals may register on Sunday, October 10, beginning at 2:00 P.M. The registration fee is $5.00.

Advance Meetings—October 9 and 10

SATURDAY, 9:00 A.M.

SOCIETY OF PUBLIC HEALTH EDUCATORS, INC.

First Session—Georgian Room, Statler Hotel

Registration and General Assembly.

Discussion groups at 11:00 A.M. in Rooms 322, 326, 328, 330, and 334, Statler Hotel.

SATURDAY, 10:00 A.M.

CONFERENCE FOR HEALTH COUNCIL WORK

First Session—Buffalo Room, Statler Hotel

SATURDAY, 2:00 P.M.

CONFERENCE FOR HEALTH COUNCIL WORK

Second Session—Buffalo Room, Statler Hotel

SATURDAY, 2:30 P.M.

SOCIETY OF PUBLIC HEALTH EDUCATORS, INC.

Second Session—Rooms 322, 326, 328, 330, and 334, Statler Hotel

SATURDAY, 5:00 P.M.

SOCIETY OF PUBLIC HEALTH EDUCATORS, INC.

Social Hour, 5:00–6:30 P.M., Empire State Room, Statler Hotel

SATURDAY, 8:00 P.M.

SOCIETY OF PUBLIC HEALTH EDUCATORS, INC.

Third Session—Rooms 322, 326, 328, 330, and 334, Statler Hotel

SUNDAY, 9:00 A.M.–5:00 P.M.

CONFERENCE OF PROFESSORS OF PREVENTIVE MEDICINE

Capen Hall, University of Buffalo Campus

INSTITUTE ON THE TEACHING OF EPIDEMIOLOGY TO MEDICAL STUDENTS

Keynote Address. R. PERCY VIVIAN, M.D.

(Subject to be announced.) THOMAS FRANCIS, JR., M.D.

Clinical Epidemiology. JOHN R. PAUL, M.D.

(Cont.)

SUNDAY, 9:00 A.M.–5:00 P.M.

CONFERENCE OF PROFESSORS OF PREVENTIVE MEDICINE, (Cont.)

Round Tables—10:00–12:00 Noon and 1:00–3:00 P.M.

PRACTICAL PROBLEMS IN TEACHING EPIDEMIOLOGY

The Contribution of Medical Geography to the Etiology of Disease.
JACQUES M. MAY, M.D.

Summary of Round Tables.

SUNDAY, 10:00 A.M.

CONFERENCE FOR HEALTH COUNCIL WORK

Third Session—Buffalo Room, Statler Hotel

SUNDAY, 11:00 A.M.

SOCIETY OF PUBLIC HEALTH EDUCATORS, INC.

Fourth Session and Luncheon—Parlor E, Statler Hotel

SUNDAY, 2:00 P.M.

CONFERENCE FOR HEALTH COUNCIL WORK

Fourth Session—Buffalo Room, Statler Hotel

SUNDAY, 2:30 P.M.

CONFERENCE OF DIRECTORS OF PUBLIC HEALTH TRAINING

First Session—Parlor D, Statler Hotel

CONFERENCE OF MUNICIPAL PUBLIC HEALTH ENGINEERS

First Session—Parlor B, Statler Hotel

SUNDAY, 6:30 P.M.

CONFERENCE OF STATE AND PROVINCIAL HEALTH AUTHORITIES OF NORTH AMERICA

Dinner Session—Buffalo Room, Statler Hotel

The Zoonoses of Australia. A. R. Southwood, M.D.

Business Meeting.

SUNDAY, 7:30 P.M.

CONFERENCE OF MUNICIPAL PUBLIC HEALTH ENGINEERS

Second Session—Grover Cleveland Room, Statler Hotel

SUNDAY, 8:00 P.M.

CONFERENCE OF DIRECTORS OF PUBLIC HEALTH TRAINING

Second Session—Parlor D, Statler Hotel

MONDAY, 9:30 A.M.

AMERICAN SCHOOL HEALTH ASSOCIATION

First Session—Assembly Hall, Memorial Auditorium

Presiding: KENNETH R. GIBSON, D.D.S., President-Elect.

HEALTH EDUCATION THROUGH RADIO AND TELEVISION

Radio Excerpts of School Broadcast "What's News."

Interpretation of Current Medical Information. MARTHA A. GABLE.

Telecast Demonstration of Lesson for Classroom Instruction.

Function and Care of the Eyes. RALPH C. LANCIANO, M.D.
Discussant: RUTH H. WEAVER, M.D.

Evaluation of the Total School Health Program. DORA A. HICKS, Ed.D.

11:00 A.M.—Business Session

Presiding: H. F. KILANDER, Ph.D., President.

President's Report.

Secretary's Report. A. O. DEWEESE, M.D.

Reports of Committees:
Mental Hygiene in the Classroom. Chairman, JENNELLE V. MOORHEAD.
School Lunch Program. Chairman, G. ROBERT KOOPMAN.

Election of Council Members.

ASSOCIATION OF BUSINESS MANAGEMENT IN PUBLIC HEALTH

Morning and Afternoon Sessions—Lecture Room, Memorial Auditorium

A Report on Activities of Public Health Personnel in Administration. WILLIAM McC. HISCOCK, EDWARD M. COHART, M.D., and WILLIAM R. WILLARD, M.D.

Bringing Administrative Personnel Up to Date. KENNETH O. WARNER.

A Discussion of the Use of the Leased Automobile Plan as It Is Now Used by the State Health Department in Wyoming. HALE LAYBOURN.

The Application of Performance Budgeting in Public Health Programs.

(Cont.)

MONDAY, 9:30 A.M.

ASSOCIATION OF BUSINESS MANAGEMENT IN PUBLIC HEALTH, (Cont.)

Panel Discussion

Participants:
ERNEST B. DAVIS
JOHN G. MCKEVITT
FLOYD HARRINGTON
MARION L. HENRY
CLEMENS W. GAINES
SAM A. KIMBLE

New Horizons in Public Health for Nonmedical Personnel. JOHN D. PORTERFIELD, M.D.

The Philadelphia Personnel Story. ADELE S. HEBB.

CONFERENCE OF MUNICIPAL PUBLIC HEALTH ENGINEERS

Third Session—Parlor E, Statler Hotel

CONFERENCE OF PUBLIC HEALTH VETERINARIANS

First Session—Rooms 324 and 326, Statler Hotel

CONFERENCE OF STATE AND PROVINCIAL PUBLIC HEALTH LABORATORY DIRECTORS

First Session—North Hall, Memorial Auditorium

Presiding: ALBERT H. HARRIS, M.D.

Research Grants. KENNETH M. ENDICOTT, M.D.

The Role of the Public Health Laboratory in Chronic Disease Programs. SEWARD E. MILLER, M.D.

Education of the Laboratory Technologist. (Speaker to be announced.)

Relationship of State Laboratories to County and City Laboratories:
From the State Standpoint. HOWARD L. BODILY, PH.D.
From the Municipal Standpoint. WILLIAM ARNOLD DORSEY.

Discussant: L. E. ELKERTON, M.D.

CONFERENCE OF STATE DIRECTORS OF PUBLIC HEALTH EDUCATION

First Session—Parlor D, Statler Hotel

MONDAY, 9:30 A.M.

NATIONAL CITIZENS COMMITTEE FOR THE WORLD HEALTH ORGANIZATION

First Session—Grand Ballroom, Statler Hotel

Second Annual Meeting. Business Session.

Presiding: THOMAS PARRAN, M.D., President.

THE WORLD HEALTH ORGANIZATION AT WORK

This will be a forum discussion with a panel of experts and a doctor, a nurse, an engineer, and a health educator describing personal experiences in world health work, the values in foreign service for the individual health worker, for our nation and for the free countries of the world. Critical comment from the audience will be expected.

Everyone invited

PUBLIC HEALTH CANCER ASSOCIATION

First Session—West Meeting Room, Memorial Auditorium

Presiding: RAYMOND F. KAISER, M.D., President.

LUNG CANCER: PROGRESS REPORT

Panel Discussion

Moderator: MORTON L. LEVIN, M.D.
Participants:
E. CUYLER HAMMOND, SC.D.
HERBERT L. LOMBARD, M.D.
MATTHEW H. GRISWOLD, M.D.
WILLIAM M. HAENSZEL
LEONID S. SNEGIREFF, M.D.

UNION-MANAGEMENT MEDICAL PROGRAM ADMINISTRATORS

First Session—Parlor B, Statler Hotel

MONDAY, 10:00 A.M.

GOVERNING COUNCIL AMERICAN PUBLIC HEALTH ASSOCIATION

10:00 A.M. and 2:30 P.M.—New York Room, Statler Hotel

1:00 P.M., Luncheon—New York Room, Statler Hotel

MONDAY, 12:30 P.M.

CONFERENCE OF MUNICIPAL PUBLIC HEALTH ENGINEERS

Luncheon Session—Parlor E, Statler Hotel

CONFERENCE OF PROFESSORS OF PREVENTIVE MEDICINE

Luncheon and Afternoon Session—Niagara Room, Statler Hotel

EVALUATION IN MEDICAL EDUCATION

Evaluation of Student Performance. JOHN T. COWLES, PH.D.

The Teaching of Preventive Medicine in Medical Schools as Reflected by the Objective Examinations of the National Board. JOHN P. HUBBARD, M.D.

Technics of Evaluation in Medical Education. GEORGE G. READER, M.D.

Discussants:

LILLIAN D. LONG, PH.D.
JOHN H. DINGLE, M.D.

Business Meeting.

NATIONAL CITIZENS COMMITTEE FOR THE WORLD HEALTH ORGANIZATION

Luncheon Session—Grand Ballroom, Statler Hotel

THE WORLD HEALTH ORGANIZATION'S TOP PRIORITIES

Presiding: (To be announced.)

Luncheon Speaker: MARCOLINO CANDAU, M.D., Director-General, World Health Organization.

Everyone invited

PUBLIC HEALTH CANCER ASSOCIATION

Luncheon and Afternoon Session—Empire State Room, Statler Hotel

Presiding: RAYMOND F. KAISER, M. D., President.

Cobalt in Cancer Therapy: Current Experience. IVAN SMITH, M.D.

The Program of the American Cancer Society. CHARLES S. CAMERON, M.D.

Factors Related to Delay in Seeking Diagnosis for Cancer. ROSE K. GOLDSEN, PH.D.

MONDAY, 12:30 P.M.

UNION-MANAGEMENT MEDICAL PROGRAM ADMINISTRATORS

Luncheon Session—Parlor D, Statler Hotel

MONDAY, 2:30 P.M.

AMERICAN SCHOOL HEALTH ASSOCIATION

Second Session—North Hall, East Meeting Room, West Meeting Room, Memorial Auditorium

North Hall

School Health Services Section.

Presiding: RUTH H. WEAVER, M.D.

The Evaluation of School Health Services—Panel Discussion.

Moderator: ARTHUR F. DAVIS, DR.P.H.
Participants:
L. M. CORLISS, M.D.
DAVID B. AST, D.D.S.
MADELINE H. ROESSLER, R.N.
MICHEL MILCH
LORETTA K. OLIGER

East Meeting Room

School Health Education Section.

Presiding: DORA A. HICKS, ED.D.

Field Experiences in Health Education for Prospective Teachers. EDWARD B. JOHNS, ED.D.

Technics of Inservice Health Education in the Public Schools. WILLIAM K. STREIT, ED.D.

Selecting and Filing Resource Materials in Health Education for Teachers and Pupils. KATHERINE RAHL.

West Meeting Room

School Health Nursing Section.

Presiding: LYDA M. SMILEY, P.H.N.

School Nursing Leadership—A Must. GERTRUDE CROMWELL, R.N.

Effects of the School on the Mental Health of Children. HELEN T. WATSON, R.N.

Progress Report on School Nursing Policies and Practices Committee.

MONDAY, 2:30 P.M.

COMMISSIONED OFFICERS ASSOCIATION OF THE U. S. PUBLIC HEALTH SERVICE

First Session—Parlor A, Statler Hotel

CONFERENCE OF PUBLIC HEALTH VETERINARIANS

Second Session—Rooms 324 and 326, Statler Hotel

CONFERENCE OF STATE AND PROVINCIAL PUBLIC HEALTH LABORATORY DIRECTORS

Second Session—Assembly Hall, Memorial Auditorium

Presiding: H. GILBERT CRECELIUS, PH.D.

Recent Developments in Microscope Design. J. R. BENFORD.

Business Meeting.

CONFERENCE OF STATE DIRECTORS OF PUBLIC HEALTH EDUCATION

Second Session—Parlor D, Statler Hotel

ENGINEERING SECTION AND THE CONFERENCE OF MUNICIPAL PUBLIC HEALTH ENGINEERS

Joint Session—Lounge Room, Memorial Auditorium

Presiding: DWIGHT F. METZLER, C.E., AND PAUL W. PURDOM.

Development of Indices of Environmental Sanitation. CLARENCE W. KLASSEN AND VERDUN RANDOLPH.

Economic Justification for Public Health Activities. THOMAS R. HOOD, M.D.

Evaluation of Environmental Problems by Lay Groups. (Speaker to be announced.)

New Fields of Environmental Sanitation Endeavor: Home Accident Prevention. (Speaker to be announced.)

Administration of Inspection Services: Centralization and Generalization. (Speaker to be announced.)

MONDAY, 2:30 P.M.

INTER-AMERICAN ASSOCIATION OF SANITARY ENGINEERING, U.S.A. SECTION

First Session—Buffalo Room, Statler Hotel

NATIONAL CITIZENS COMMITTEE FOR THE WORLD HEALTH ORGANIZATION

Second Session—Grand Ballroom, Statler Hotel

PRINCIPLES, PLATITUDES, AND PERFORMANCE

Symposium presentation by American health and civic leaders with forum discussion by the audience on:

United States support for world health.

Comparing earlier attitudes and philosophy toward an international health agency with today's.

How the story of the World Health Organization can be brought to the American people.

Everyone invited

UNION-MANAGEMENT MEDICAL PROGRAM ADMINISTRATORS

Second Session—Parlor B, Statler Hotel

MONDAY, 5:00 P.M.

RECEPTION TO THE PRESIDENT OF THE AMERICAN PUBLIC HEALTH ASSOCIATION

Grand Ballroom, Statler Hotel, 5:00–7:00 P.M., Informal

Limited to members of the American Public Health Association and their wives.

MONDAY, 6:30 P.M.

CONFERENCE OF STATE AND PROVINCIAL PUBLIC HEALTH LABORATORY DIRECTORS

Dinner Session—Georgian Room, Statler Hotel

Report of the Committee on the Kimble Methodology Research Award.

Research Award. JAMES GIBBARD.

Dinner Speaker: ORREN D. CHAPMAN, M.D.

ENGINEERING SECTION, THE CONFERENCE OF MUNICIPAL PUBLIC HEALTH ENGINEERS AND THE CONFERENCE OF STATE SANITARY ENGINEERS

Annual Engineers' Stag Dinner, Niagara Room, Statler Hotel

MILITARY GOVERNMENT—CIVIL AFFAIRS PUBLIC HEALTH SOCIETY

Dinner Session—Parlor G, Statler Hotel

MONDAY, 8:00 P.M.

AMERICAN ASSOCIATION OF PUBLIC HEALTH PHYSICIANS

First Session—New York Room, Statler Hotel

AMERICAN SCHOOL HEALTH ASSOCIATION

Third Session—Grand Ballroom, Statler Hotel

Presiding: H. F. KILANDER, PH. D., President.

Nutritional Needs of School Children. AUSTIN E. HILL, M.D.

EDUCATION POLICIES COMMISSION REPORT ON SCHOOL ATHLETICS

Panel Discussion

Participants:

ELMER B. COTTRELL, ED.D.
(To be announced.)

Mental Health—Keystone of Education. DANA L. FARNSWORTH, M.D.

MONDAY, 8:00 P.M.

ASSOCIATION OF MATERNAL AND CHILD HEALTH AND CRIPPLED CHILDREN'S DIRECTORS

Evening Session—Buffalo Room, Statler Hotel

Meeting of Executive Council. All members are invited.

TUESDAY, 8:00 A.M.

COMMISSIONED OFFICERS ASSOCIATION OF THE U. S. PUBLIC HEALTH SERVICE

Breakfast Session—Buffalo Room, Statler Hotel

(Open to all U. S. Public Health Service Officers.)

NATIONAL ADVISORY COUNCIL, CLEVELAND HEALTH MUSEUM

Breakfast Session—Parlor A, Statler Hotel

TUESDAY, 9:30 A.M.

DENTAL HEALTH SECTION

First Session—East Meeting Room, Memorial Auditorium

Presiding: POLLY AYERS, D.D.S., Chairman.

The Sturgis, Michigan, Dental Care Project for Children. CHARLES J. DONNELLY, D.D.S.

Dental Education in Great Britain. A. M. HORSNELL, F.D.S., L.R.C.P., M.R.C.S.

The Dental Aspects of the Maryland Medical Care Program, RICHARD C. LEONARD, D.D.S.

Field Training for Public Health Dentists. PHILIP E. BLACKERBY, JR., D.D.S.

Section Business.

TUESDAY, 9:30 A.M.

ENGINEERING SECTION

First Session—Parlor D, Statler Hotel

Presiding: DWIGHT F. METZLER, C.E., Chairman.

NEW HORIZONS IN SANITATION

New Horizons in Environmental Health Research: A Review of the Sanitary Engineering Center Program in Cincinnati. MARK D. HOLLIS, C.E.

The Lawrence Experiment Station: Past, Present and Future. CLARENCE I. STERLING, JR.

Counteracting Communism Through Foreign Assistance Programs in Public Health. JOHN A. LOGAN, D.Sc.

Some Public Health Aspects of Regional Water Supply Planning in the Arkansas-White-Red River Basins. E. C. WARKENTIN AND H. W. POSTON.

Drought Problems and Their Effect on Municipal Water Supplies. C. H. BILLINGS.

EPIDEMIOLOGY AND LABORATORY SECTIONS

Joint Session—Assembly Hall, Memorial Auditorium

Presiding: JOHN H. DINGLE, M.D.

NEW ADVANCES IN VIRAL AND RICKETTSIAL DISEASES

Studies of a New Group of Viruses Prevalent in the Secretions and Tissues of the Human Respiratory Tract. Possible Significance in Human Disease. ROBERT J. HUEBNER, M.D., W. P. ROWE, M.D., AND THOMAS G. WARD, M.D.

Epidemiological Investigations with Respiratory Disease Virus RI-67. M. R. HILLEMAN, PH.D., CAPTAIN H. E. DASCOMB, MC, USA, LIEUTENANT R. L. BUTLER, MC, USA, CAPTAIN J. J. MCCUE, MC, USA, CAPTAIN R. STRAGNELL, MC, USA, AND J. H. WERNER.

The Relation of the New Respiratory Viruses to the Problem of Acute Respiratory Infections. HAROLD S. GINSBERG, M.D., WILLIAM S. JORDAN, JR., M.D., SIDNEY KATZ, M.D., GEORGE F. BADGER, M.D., AND JOHN H. DINGLE, M.D.

A Review of Experience with an Avirulent Strain of R. prowazeki (Strain E) as a Living Agent for Immunizing Man Against Epidemic Typhus. JOHN P. FOX, M.D.

Serological Epidemiology. JOSEPH L. MELNICK, PH.D., AND JOHN R. PAUL, M.D.

TUESDAY, 9:30 A.M.

HEALTH OFFICERS SECTION

First Session—Lecture Room, Memorial Auditorium

WILLIAM C. GORGAS CENTENNIAL SESSION

Presiding: ROGER F. SONDAG, M.D., Chairman.

Evaluation of a Mental Health Institute for Public Health Officers. HERBERT S. RIPLEY, M.D., AND LELAND E. POWERS, M.D.

Rehabilitation of Problem Families. H. C. MAURICE WILLIAMS, O.B.E., M.D., D.P.H.

Section Business and Election of Officers.

INDUSTRIAL HYGIENE SECTION

First Session—Rooms 324 and 326, Statler Hotel

Presiding: WARREN A. COOK, Chairman.

Occupational Deafness: Medical, Medicolegal and Compensation Aspects, Diagnosis and Prevention. ABRAHAM I. GOLDNER, M.D.

Current Trends in Labeling Requirements. (Speaker to be announced.)

The Helping Hand in Industrial Hygiene. (Speaker to be announced.)

Industrial Hygiene Milestones in Governmental Agencies. VICTORIA M. TRASKO.

MATERNAL AND CHILD HEALTH SECTION

First Session—Buffalo Room, Statler Hotel

Presiding: EDWARD DAVENS, M.D., Chairman.

A Preliminary Inquiry into the Cost of Hospital Care for Certain Types of Diseases and Their Implications in Rehabilitation. LENDON SNEDEKER, M.D., AND EDWIN S. LANCASTER.

A Study of the Incidence of Illnesses in the Premature Infant During the First Year of Life Using the Epidemiologic Method. GEORGIA B. PERKINS, M.D.

Problems in Transporting Premature Infants in Rural Areas. EDWARD H. TOWNSEND, M.D.

(Additional speakers to be announced.)

Section Business.

TUESDAY, 9:30 A.M.

MEDICAL CARE SECTION

First Session—Lounge, Memorial Auditorium

Presiding: FRANZ GOLDMANN, M.D., Chairman.

THE OUTPATIENT DEPARTMENT, THE HEALTH DEPARTMENT AND THE MEDICAL SCHOOL

At the University of Oklahoma: Collaboration of the Medical School and the Health Department in Teaching Medical Students. STEWART WOLF, M.D.

At the University of Colorado: The General Medical Clinic—An Experiment in Medical Education and Medical Care. FRED KERN, JR., M.D.

MEDICAL CARE IN THE HEALTH DEPARTMENT

Canada's Laboratory and Radiological Services Grant. FREDERICK W. JACKSON, M.D.

Medical Care Programs in a Large City Health Department. JOSEPH G. MOLNER, M.D., AND VLADO A. GETTING, M.D.

Section Business.

Section Council Meeting.

PUBLIC HEALTH EDUCATION SECTION

First Session—North Hall, Memorial Auditorium

Presiding: ANDIE L. KNUTSON, Ph.D., Chairman.

Business Meeting

Presentation of the Year's Activities by the Section Committees.

Discussion.

Announcement of Nominations.

Other Section Business.

Election of Officers.

PUBLIC HEALTH NURSING SECTION

First Session—Niagara Room, Statler Hotel

Presiding: PATRICIA WALSH, R.N., Chairman.

Report of the Secretary. HELEN L. FISK, R.N.

Committee Reports and Discussion.

Section Business.

Report of Nominating Committee and Election of Officers.

TUESDAY, 9:30 A.M.

SCHOOL HEALTH SECTION AND THE AMERICAN SCHOOL HEALTH ASSOCIATION

First Session—West Meeting Room, Memorial Auditorium

Presiding: ELIZABETH S. AVERY, Ph.D.

Section Business.

Election of Officers.

A Survey of School Lunch Practices. CHARLES C. WILSON, M.D., AND ERIC W. MOOD.

Discussant: GUY N. MAGNESS, M.D.

A Study of Some Aspects of Evaluation in a Health Education Workshop. JOHN H. SHAW, Ed.D., AND ANDREW S. COCCARI.

Discussant: EDWARD B. JOHNS, Ed.D.

New Tools in Health Education. WINFIELD G. DOYLE, Ed.D.

Discussant: H. F. KILANDER, Ph.D.

STATISTICS SECTION AND THE AMERICAN ASSOCIATION OF REGISTRATION EXECUTIVES

First Session—Parlor E, Statler Hotel

Presiding: ALAN E. TRELOAR, Ph.D.

Section Business (Nominations for Section Officers.)

Public Health Aspects of the 1951 Impairment Study: New Facts on Mortality of Insured Lives with Medical Impairments. EDWARD A. LEW AND HERBERT H. MARKS.

The Application of Multiple Cause Tabulations to Analyses of Deaths from Cardiovascular Disease. LOUIS WEINER, MARJORIE T. BELLOWS, GRACE MCAVOY, AND ELI COHEN.

An Analysis of Changing Concepts in the Production of National Vital Statistics. HOWARD WEST.

Section Business and Election of Officers.

TUESDAY, 12:30 P.M.

AMERICAN ASSOCIATION OF PUBLIC HEALTH PHYSICIANS

Luncheon Session—Rooms 324 and 326, Statler Hotel

TUESDAY, 12:30 P.M.

DELTA OMEGA

Luncheon Session—New York Room, Statler Hotel

ENGINEERING SECTION

Luncheon Session—Parlor D, Statler Hotel

Presiding: DWIGHT F. METZLER, C.E., Chairman.

FOOD AND NUTRITION SECTION

Luncheon Session—Parlor E, Statler Hotel

Presiding: HARRY W. VON LOESECKE.

Section Business and Election of Officers.

MATERNAL AND CHILD HEALTH SECTION

Luncheon Session—Buffalo Room, Statler Hotel

Section Business.

PUBLIC HEALTH EDUCATION SECTION

Luncheon Session—Empire State Room, Statler Hotel

Presiding: ANDIE L. KNUTSON, Ph.D., Chairman.

(To be announced.)

PUBLIC HEALTH NURSING SECTION

Luncheon Session—Niagara Room, Statler Hotel

Presiding: RUTH E. RIVES, R.N.

The Nursing Activities of the Erie County Health Department and the Method of Reporting. MARY E. JONES, R.N.

TUESDAY, 2:30 P.M.

DENTAL HEALTH, FOOD AND NUTRITION, HEALTH OFFICERS, PUBLIC HEALTH EDUCATION, PUBLIC HEALTH NURSING, SCHOOL HEALTH, AND STATISTICS SECTIONS

Joint Session—Assembly Hall, Memorial Auditorium

Presiding: ALAN E. TRELOAR, Ph.D.

PROGRAM EVALUATION

The Whys and Wherefores of Program Evaluation. BERNARD G. GREENBERG, Ph.D., AND BERWYN F. MATTISON, M.D.

Evaluation of a Program in Health Education. ANDIE L. KNUTSON, Ph.D., AND BEN SHIMBERG, Ph.D.

Evaluation of the Albany Cardiovascular Health Center. GEORGE JAMES, M.D., AND HERMAN E. HILLEBOE, M.D.

Evaluation of a School Health Program. WESLEY P. CUSHMAN, D.Ed.

Evaluation of a Local Dental Health Program. GEORGE A. NEVITT, D.D.S.

Evaluation of a Nutrition Program. JOHN H. BROWE, M.D.

Discussant: JOHN D. PORTERFIELD, M.D.

ENGINEERING SECTION

Second Session—Parlor D, Statler Hotel

Presiding: WALTER S. MANGOLD.

HOUSING—A SYMPOSIUM

The Quality of Housing, Before and After Rehabilitation. RALPH J. JOHNSON.

The Healthful Development of New Housing. EARL W. SMITH.

Training for Local Health Department Participation in Housing Improvement. ROSS W. BUCK.

Nuisance Complaints as They Relate to a Housing Program. ANDREW T. DEMPSTER, JR.

TUESDAY, 2:30 P.M.

EPIDEMIOLOGY SECTION

First Session—West Meeting Room, Memorial Auditorium

Presiding: WILLIAM McD. HAMMON, M.D., Chairman.

The Zoonoses of Australia. A. R. SOUTHWOOD, M.D.

Diagnostic and Epidemiological Toxoplasma Serology. HARRY A. FELDMAN, M.D.

Discussant: MARION M. BROOKE, Sc.D.

Oral Penicillin Prophylaxis of Epidemic Streptococcal Infections. COMMANDER JOHN R. SEAL, MC, USN.

Discussants:
HARRY A. FELDMAN, M.D.
CLAYTON G. LOOSLI, M.D.

Differences in General Susceptibility to Illness in Homogeneous Groups of Adult Men and Women. LAWRENCE E. HINKLE, JR., M.D., AND NORMAN PLUMMER, M.D.

Discussants:
HAROLD G. WOLFF, M.D.
ALEXANDER D. LANGMUIR, M.D.

Distribution of Cancer Mortality in Cuyahoga County, Ohio. THOMAS F. MANCUSO, M.D., ELIZABETH MACFARLANE, AND JOHN D. PORTERFIELD, M.D.

Discussants:
ALEXANDER G. GILLIAM, M.D.
WILLIAM M. HAENSZEL.

EPIDEMIOLOGY, MATERNAL AND CHILD HEALTH, AND STATISTICS SECTIONS

Joint Session—North Hall, Memorial Auditorium

Presiding: ALICE D. CHENOWETH-PATE, M.D.

EPIDEMIOLOGICAL APPROACHES TO FETAL AND NEONATAL DEATH AND DISABILITY

Epidemiological Approaches to Perinatal Loss. GEORGE ANDERSON, M.D.

Associations Between Premature Birth and Socioeconomic Status. ROWLAND V. RIDER, Sc.D., AND MATTHEW TABACK, Sc.D.

Does Altitude Affect Infant Birth Weight? JOHN A. LICHTY, M.D., AND PAUL D. BRUNS, M.D.

The Epidemiology of Retrolental Fibroplasia. THEODORE H. INGALLS, M.D.

TUESDAY, 2:30 P.M.

INDUSTRIAL HYGIENE SECTION

Second Session—East Meeting Room, Memorial Auditorium

Presiding: WARREN A. COOK, Chairman.

Section Business.

LABORATORY SECTION

First Session—Lounge, Memorial Auditorium

Presiding: MYRTLE GREENFIELD, Chairman, AND ALBERT H. HARRIS, M.D.

PROGRESS IN LABORATORY STUDIES OF INFECTIOUS DISEASES

Use of Serological Identification of Streptococcus in the Spread of Infection. LEWIS WANNAMAKER.

The Spread and the Control of an Outbreak of Infantile Diarrhea Due to Escherichia coli OIII in a Children's Hospital. WARREN E. WHEELER, M.D.

Complement-Fixation Test for Trichinosis. VICTOR N. TOMPKINS, M.D., AND THELMA F. MURASCHI.

Propagation of Poliomyelitis Virus in Fetal Animals While in Utero. FRED W. GALLAGHER, PH.D.

The Public Health Significance of Tubercle Bacilli Resistant to Isoniazid. DANIEL WIDELOCK, PH.D.

MEDICAL CARE SECTION, THE ASSOCIATION OF HOSPITAL PLANNING AGENCIES, AND THE AMERICAN ASSOCIATION OF HOSPITAL CONSULTANTS

Joint Session—Lecture Room, Memorial Auditorium

Presiding: PAUL A. LEMBCKE, M.D.

CHRONIC DISEASE FACILITIES

(Speakers to be announced.)

Section Business and Election of Officers.
Section Council Meeting.

TUESDAY, 5:00 P.M.

FOOD AND NUTRITION SECTION

Social Hour, 5:00–7:00 P.M., Georgian Room, Statler Hotel

TUESDAY, 5:00 P.M.

PUBLIC HEALTH EDUCATION SECTION

Social Hour, 5:00–7:00 P.M., Buffalo Room, Statler Hotel

UNIVERSITY OF MICHIGAN ALUMNI

Social Hour, 5:00–7:00 P.M., New York Room, Statler Hotel

TUESDAY, 8:30 P.M.

FIRST GENERAL SESSION

Grand Ballroom, Statler Hotel

Presiding: HUGH R. LEAVELL, M.D., President, American Public Health Association.

Addresses of Welcome:
BERWYN F. MATTISON, M.D., Commissioner of Health of Erie County, N. Y.
HERMAN E. HILLEBOE, M.D., Commissioner of Health of New York State.

Greetings from the World Health Organization. MARCOLINA CANDAU, M.D.

Greetings from India. RAJKUMARI AMRIT KAUR.

Greetings from Great Britain. H. C. MAURICE WILLIAMS, O.B.E., M.D., D.P.H.

Presidential Address. HUGH R. LEAVELL, M.D.

Presentation of Sedgwick Memorial Medal.

WEDNESDAY, 8:00 A.M.

GRADUATES' ORGANIZATION, SCHOOL OF HYGIENE, UNIVERSITY OF TORONTO

Breakfast Session—Parlor E, Statler Hotel

THE JOHNS HOPKINS UNIVERSITY ALUMNI

Breakfast Session—Empire State Room, Statler Hotel

WEDNESDAY, 8:00 A.M.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY ALUMNI

Breakfast Session—Parlor G, Statler Hotel

UNIVERSITY OF MICHIGAN ALUMNI

Breakfast Session—Niagara Room, Statler Hotel

UNIVERSITY OF NORTH CAROLINA ALUMNI

Breakfast Session—Parlor D, Statler Hotel

WEDNESDAY, 9:30 A.M.

DENTAL HEALTH, FOOD AND NUTRITION, MATERNAL AND CHILD HEALTH, AND SCHOOL HEALTH SECTIONS, AND THE AMERICAN SCHOOL HEALTH ASSOCIATION

Joint Session—Assembly Hall, Memorial Auditorium

Presiding: EDWARD DAVENS, M.D.

NUTRITIONAL STATUS OF CHILDREN AS AFFECTED BY DIET

Food Practices and Nutritional Status of Iowa School Children. ERCEL S. EPPRIGHT, PH.D.

Nutritional Status of Siblings Before and After Starting to School. NORMA P. DILLARD, ERNA B. JONES, NATALIA M. TANNER, M.D., AND VERZ R. GODDARD, PH.D.

Epidemiological Factors Related to Weight Gain in a Selected Group of 100 Children in New York City. ETHEL MASLANSKY.

A Canadian Table of Average Weights for Height, Age, and Sex. LIONEL B. PETT, M.D.

WEDNESDAY, 9:30 A.M.

ENGINEERING, EPIDEMIOLOGY, FOOD AND NUTRITION, AND LABORATORY SECTIONS

Joint Session—North Hall, Memorial Auditorium

Presiding: WALTER S. MANGOLD AND WILLIAM McD. HAMMON, M.D.

ENTERIC INFECTIONS AND INFECTIOUS HEPATITIS

Examination of Sewage for Pathogenic Microorganisms. SALLY M. KELLY, PH.D., MARY CLARK, AND MARION B. COLEMAN.

Diarrheal Disease in Fresno County, California: Further Studies in the Relationship of Shigellosis and the Environment. ARTHUR C. HOLLISTER, JR., M.D., M. DOROTHY BECK, A. M. GITTELSOHN, AND EMMARIE C. HEMPHILL.

Type Shifts in Shigella flexneri During Epidemics. LT. COLONEL ROBERT B. LINDBERG, MSC, USA, AND KENZO OKABE, PH.D.

Epidemiology of Infectious Hepatitis. WILLIAM R. STINGER, M.D.

Ecological Factors in Infectious Hepatitis. ABRAHAM GELPERIN, M.D.

Infectious Hepatitis, A Sanitary Problem. C. H. CONNELL, PH.D.

Establishing an Epidemiological Base for Environmental Sanitation Programs. JUSTIN M. ANDREWS, SC.D.

Parasitism and Nutrition on Formosa. GEOFFREY W. RAKE, M.B., B.S.

INDUSTRIAL HYGIENE AND MEDICAL CARE SECTIONS

Joint Session—Lounge, Memorial Auditorium

Presiding: HENRY C. DANIELS.

MEDICAL CARE AND REHABILITATION ASPECTS OF WORKMEN'S COMPENSATION

Present Status and Critique. JEROME POLLACK.

Rehabilitation Aspects from the Standpoint of the Medical Profession. ALEXANDER P. AITKEN, M.D.

Industrial Injuries Under the National Insurance Scheme in Great Britain. ARTHUR MASSEY, C.B.E., M.D.

Administrative Practice in Relation to the Quality of Medical Care. B. H. G. CURRY, M.D.; J. E. F. HASTINGS, M.D.; G. H. HATCHER, M.D.; AND MARY A. ROSS, PH.D.

WEDNESDAY, 9:30 A.M.

MATERNAL AND CHILD HEALTH AND SCHOOL HEALTH SECTIONS, AND THE AMERICAN SCHOOL HEALTH ASSOCIATION

Joint Session—East Meeting Room, Memorial Auditorium

Presiding: WESLEY P. CUSHMAN, D.ED.

STUDIES TO EVALUATE HEALTH SERVICES TO CHILDREN

The Social and Economic Factors Related to School-Discovered Medical and Dental Defects. WILLIAM G. MATHER, PH.D., LAURUS WHITMAN, A'DELBERT SAMSON, AND MARY E. AYERS.

A Study of Periodic School Medical Examinations. 1. Methodology and Preliminary Observations. ALFRED YANKAUER, JR., M.D., AND RUTH LAWRENCE, M.D.

A Quantitative Study of a Nurse's Observations on Development in Infancy. HILDA KNOBLOCH, M.D.

A Citizen's Health Survey of Two Midwestern Counties. FRANCES K. HARDING, M.D.

Technics for Evaluating a Program for Physically Handicapped Children. HELEN M. WALLACE, M.D., ROBERT S. SIFFERT, M.D., MARGARET A. LOSTY, R.N., HORACE YU, M.D., AND HELEN GOSSETT.

PUBLIC HEALTH EDUCATION SECTION

Second Session—West Meeting Room, Memorial Auditorium

Presiding: (To be announced.)

NEW HORIZONS IN HEALTH EDUCATION

By the Committee on Developments in Health Education

LUCRETIA A. SAUNDERS, Chairman.
SEWALL MILLIKEN, Co-Chairman.

By the Regional Subcommittees.

Discussion.

PLANNING FOR THE YEAR AHEAD

Discussion by the Section.

WEDNESDAY, 9:30 A.M.

PUBLIC HEALTH NURSING SECTION

Second Session—Lecture Room, Memorial Auditorium

Presiding: PATRICIA WALSH, R.N., Chairman.

PROBLEMS IN THE EVALUATION OF AN INSERVICE TRAINING PROGRAM IN MENTAL HEALTH

Moderator: ALAN D. MILLER, M.D.

Speakers:
MAURICE C. GREENHILL, M.D.
FLORENCE M. BURNETT, R.N.

Discussants:
RUTH GILBERT, R.N.
ERNEST M. GRUENBERG, M.D.

Educational Investment and Public Health Nursing. LESLIE W. KNOTT, M.D., AND M. OLWEN DAVIES, R.N.

STATISTICS SECTION AND THE BIOMETRICS SOCIETY

Second Session—Buffalo Room, Statler Hotel

Presiding: ALAN E. TRELOAR, PH.D.

USES OF SAMPLING IN PUBLIC HEALTH AND RELATED FIELDS

Application of Sampling in the Evaluation of Health Education Material. IRWIN M. ROSENSTOCK, PH.D.

(Other speakers to be announced.)

WEDNESDAY, 12:30 P.M.

ASSOCIATION OF SCHOOLS OF PUBLIC HEALTH

Luncheon Session—Parlor A, Statler Hotel

DENTAL HEALTH SECTION

Luncheon Session—Parlor D, Statler Hotel

Presiding: POLLY AYERS, D.D.S., Chairman.

A Trip Report of New Zealand Dentistry. BASIL G. BIBBY, D.M.D.

WEDNESDAY, 12:30 P.M.

HEALTH OFFICERS SECTION

Luncheon Session—Georgian Room, Statler Hotel

Presiding: (To be announced.)

THE ROLE OF THE PUBLIC HEALTH ADMINISTRATOR

A discussion participation luncheon of a new type. No paper will be read, no speeches will be given. A copy of the title paper by Edward M. Holmes, Jr., M.D., William R. Harton, Jr., and Ruth Freeman, Ed.D., will be distributed with the luncheon ticket for advance reading. The subject will be discussed at the separate tables during the luncheon and from the floor following the luncheon.

LABORATORY SECTION

Luncheon Session—Grand Ballroom, Statler Hotel

Presiding: ALBERT H. HARRIS, M.D.

The following subjects are planned for discussion at separate tables with a qualified discussion leader at each table:

Rabies	Pathogenic Coliform Bacteria
Poliomyelitis	Mycology
Virus Diagnosis	Antibiotics
Tuberculosis	Membrane Filter
Streptococcus Infections	Trichinosis

Tickets for the luncheon may be obtained by writing to Dr. Albert H. Harris, Division of Laboratories and Research, State Department of Health, Albany 1, N. Y. Please specify the topic desired and enclose a check for $3.10 for the price of the meal. Tickets for tables that have not been filled through advance reservation may be obtained at the Registration Desk, Memorial Auditorium, Buffalo, beginning Monday morning, October 11. Table assignments will be made at the time of purchase of the ticket. Tickets will not be sold at the luncheon; they must be obtained in advance.

Members of all Sections are cordially invited.

NATIONAL SANITATION FOUNDATION

Luncheon and Afternoon Session—Parlor B, Statler Hotel

SCHOOL HEALTH SECTION

Luncheon Session—Parlor E, Statler Hotel

Luncheon Speaker: MILFORD H. PRATT.

WEDNESDAY, 12:30 P.M.

STATISTICS SECTION

Luncheon Session—Buffalo Room, Statler Hotel

WEDNESDAY, 2:30 P.M.

ASSOCIATION SYMPOSIUM

First Session—Assembly Hall, Memorial Auditorium

THE IMPACT OF SUBURBANIZATION ON PUBLIC HEALTH

What are the facts concerning the shifts in population and economic activity between and within our cities and their suburban growing edges? What are the meanings of these trends to health facilities, services, and personnel?

The First Session will describe and report the facts and the trends of America's search for living space by families, industries, and communities. A panel of experienced health workers, together with sociologists, public administrators, and others, will highlight the areas of significance to public health planning and practice. This discussion will be based on case material, a summary of which will be available at a special consultation booth in the scientific exhibit area. A distinguished public figure will summarize the facts and trends and draw the issues from the community viewpoint.

The Second Session of the Association Symposium will take place on Friday afternoon.

COORDINATING COMMITTEE ON LABORATORY METHODS AND THE LABORATORY SECTION

Joint Session—17th Floor Assembly, Statler Hotel

2:30–3:30 P.M.

SUBCOMMITTEE ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND SEWAGE

Presiding: JOSEPH A. MCCARTHY.

Bacteriologic Studies in Disinfection of Air in Large Rural Central Schools. F. WELLINGTON GILCREAS AND HAZEL R. REED.

Comparison of the Most Probable Numbers of E. coli to Enterococci in River Water. WARREN LITSKY, PH.D., AND WALTER L. MALLMANN, PH.D.

3:30–5:00 P.M.

SUBCOMMITTEE ON STANDARD METHODS FOR THE EXAMINATION OF DAIRY PRODUCTS

Presiding: LUTHER A. BLACK, PH.D., Chairman.

Progress Report: Certification of Milk-Plating Agar. LEON BUCHBINDER, PH.D.

Preparation for and Experiences in an Approval Program of Local Milk Laboratories Utilizing Split Milk Samples. WILLIAM J. BECK, AND IRMA L. ADAMS.

WEDNESDAY, 2:30 P.M.

GOVERNING COUNCIL
AMERICAN PUBLIC HEALTH ASSOCIATION

Second Meeting—Empire State Room, Statler Hotel

LABORATORY SECTION

Second Session—New York Room, Statler Hotel

Presiding: S. EDWARD SULKIN, PH.D., AND CHARLES R. REIN, M.D.

STUDIES IN BACTERIAL AND SERODIAGNOSIS OF BRUCELLOSIS AND SYPHILIS

Dermal Sensitivity in Brucellosis and its Epidemiologic Significance. CHARLES M. CARPENTER, M.D.

Microscopic and Macroscopic Flocculation Tests for Brucellosis. CHARLES A. HUNTER, PH.D.

The Effect of Killed Brucella Cells on an Extract from Sonically Disintegrated Brucella Cells in Culture Media on the Growth of Brucella abortus. I. FOREST HUDDLESON, D.V.M.

The Evaluation of Serological Tests for Syphilis in Hansen's Disease. JOHN F. KENT, PH.D., ROBERT E. HARRIGAN, AND ALEJANDRO GARCIA-OTERO, M.D.

The Standardization of Diagnostic Methods for Gonorrheal Infections. LT. COLONEL PAUL S. PARRINO, MC, USA.

The Results of Inoculating Killed and Live Treponema pallida in Volunteers in Sing Sing Prison. EVANS W. THOMAS, M.D.

MEDICAL CARE SECTION

Second Session—Lecture Room, Memorial Auditorium

Presiding: BERNARD D. DAITZ, PH.D.

THE PRESIDENT'S REHABILITATION PROGRAM

(Speakers to be announced.)

NEW PROGRAMS—OLD PROBLEMS

Aid to the Permanently and Totally Disabled. I. JAY BRIGHTMAN, M.D.

Rehabilitation in the Poorhouse. MURRAY B. FERDERBER, M.D.

WEDNESDAY, 2:30 P.M.

SCHOOL HEALTH SECTION

Second Session—Parlors C and G, and Rooms 324 and 326, Statler Hotel

OPEN COMMITTEE MEETINGS

Parlor C **Committee on School Nursing.** FLORENCE L. FOGLE, R.N., Chairman.

Parlor G **Committee on Evaluation.** WESLEY P. CUSHMAN, D.ED., Chairman.

Room 324 **Committee on Hearing Conservation.** MILDRED E. DOSTER, M.D., Chairman.

Room 326 **Committee on Secondary School Health Service.** J. ROSWELL GALLAGHER, M.D., Chairman.

WEDNESDAY, 5:00 P.M.

NATIONAL SANITATION FOUNDATION

Social Hour followed by a Dinner and Evening Session—Parlors A and B, Statler Hotel

UNIVERSITY OF MINNESOTA

Social Hour followed by Dinner at 6:30 P.M.—Parlor D, Statler Hotel

WEDNESDAY, 5:30 P.M.

HARVARD PUBLIC HEALTH ALUMNI ASSOCIATION

Social Hour followed by Dinner at 6:30 P.M.—Niagara Room, Statler Hotel

WEDNESDAY, 6:30 P.M.

AMERICAN SCHOOL HEALTH ASSOCIATION

Dinner Session—Buffalo Room, Statler Hotel

Presiding: H. F. KILANDER, PH.D., President.

(Subject to be announced.) W. W. BAUER, M.D.

Presentation of the William A. Howe Award to Gertrude Cromwell, R.N., by A. O. DeWeese, M.D.

Response by Miss Cromwell.

Recognition of Members Who Were Present at the First Meeting in Buffalo.

Installation of Officers.

WEDNESDAY, 8:00 P.M.

AMERICAN ASSOCIATION OF PUBLIC HEALTH PHYSICIANS

Second Session—17th Floor Assembly, Statler Hotel

CONFERENCE OF MUNICIPAL PUBLIC HEALTH ENGINEERS

Fourth Session—Parlor E, Statler Hotel

Committee on Housing.

INTERNATIONAL SOCIETY OF MEDICAL HEALTH OFFICERS

First Session—Parlor G, Statler Hotel

MEDICAL CARE SECTION

Third Session—Georgian Room, Statler Hotel

PROFESSIONAL EDUCATION AND MEDICAL CARE

Moderator: MILTON TERRIS, M.D.

Speaker: LOWELL J. REED, PH.D.

Discussants: (To be announced.)

THURSDAY, 8:00 A.M.

GEORGE PEABODY COLLEGE FOR TEACHERS ALUMNAE

Breakfast Session—Parlor G, Statler Hotel

YALE UNIVERSITY ALUMNI

Breakfast Session—New York Room, Statler Hotel

THURSDAY, 8:30–10:30 A.M.

NEW YORK STATE PUBLIC HEALTH STATISTICIANS

First Session—Room 324, Statler Hotel

THURSDAY, 9:30 A.M.

DENTAL HEALTH, FOOD AND NUTRITION, HEALTH OFFICERS, PUBLIC HEALTH EDUCATION, AND PUBLIC HEALTH NURSING SECTIONS

Joint Session—Assembly Hall, Memorial Auditorium

Presiding: (To be announced.)

COOPERATIVE STUDIES ON INDIVIDUAL AND COMMUNITY ACTION FOR HEALTH

The Duluth Study Reports: Is Group Discussion–Group Decision Effective as a Health Education Approach at the Local Operational Level?

Panel Discussion

Participants:

MARIO M. FISCHER, M.D.
BETTY T. BOND
MARILLYN BEYER, R.N.

(Other studies to be announced.)

THURSDAY, 9:30 A.M.

ENGINEERING AND FOOD AND NUTRITION SECTIONS

Joint Session—Lecture Room, Memorial Auditorium

Presiding: DWIGHT F. METZLER, C.E.

The Program of the National Committee on Food Protection. HENRY F. VAUGHAN, DR.P.H.

Sanitation Aspects of "Take-Out" Foods for Home Consumption, Including Pre-Cooked Frozen Foods. CHARLES L. SENN.

Food Poisoning and Nutrient Loss in "Take-Out" Foods. (Speaker to be announced.)

New Equipment and New Processes in the Dairy Field. H. L. THOMASSON.

EPIDEMIOLOGY AND LABORATORY SECTIONS

Joint Session—Lounge, Memorial Auditorium

Presiding: JOHANNES IPSEN, JR., M.D., AND JOHN F. ENDERS, PH.D.

ACTIVE IMMUNIZATION

Five Years Field Experience with Modified Live Virus Rabies Vaccine. DONALD J. DEAN, D.V.M., AND ROBERT F. KORNS, M.D.

Antibody Responses of Man to Three Types of Antityphoid Immunizing Agents: Heat-Phenol Fluid Vaccine, Acetone-Dehydrated Vaccine, and Isolated Vi and O Antigens. MAURICE LANDY, PH.D.; MAJOR SIDNEY GAINES, MSC, USA; COMMANDER JOHN R. SEAL, MC, USN; AND LIEUTENANT JAMES E. WHITESIDE, MC, USN.

Variations in Booster Response to Specific Antigens. MORRIS SIEGEL, M.D.

Effects of Routine Immunization of Children with Triple Vaccine (D-P-T). JOHANNES IPSEN, M.D., AND HARRY E. BOWEN, PH.D.

Poliomyelitis Vaccine Field Trial: Study Design and Operative Procedure. ROBERT F. KORNS, M.D.

THURSDAY, 9:30 A.M.

EPIDEMIOLOGY, MATERNAL AND CHILD HEALTH, AND PUBLIC HEALTH NURSING SECTIONS

Joint Session—North Hall, Memorial Auditorium

Presiding: GEORGE M. WHEATLEY, M.D., AND PATRICIA WALSH, R.N.

CHILDHOOD ACCIDENT PREVENTION

An Educational Project in Childhood Accident Prevention. RENEE ZINDWER, M.D.

Safety Education Without Fear. PAUL V. LEMKAU, M.D.

Application of Public Health Methods to Child Safety:

Epidemiological Principles Which May Be Used in the Study of Child Accidents. ROSS A. MCFARLAND, PH.D.

Poison Information Centers. EDWARD PRESS, M.D.

Study of Child Accidents. HAROLD JACOBZINER, M.D.

Discussants:

(To be announced.)

MEDICAL CARE SECTION AND THE AMERICAN ASSOCIATION OF HOSPITAL CONSULTANTS

Joint Session—West Meeting Room, Memorial Auditorium

Presiding: HENRY B. MAKOVER, M.D.

APPROACHES TO THE QUALITY OF HOSPITAL CARE

A Prospectus. MINDEL SHEPS, M.D.

Discussants:

(To be announced.

THURSDAY, 9:30 A.M.

SCHOOL HEALTH SECTION

Third Session—Parlors A, B, C, and E, Statler Hotel

OPEN COMMITTEE MEETINGS

Parlor A **Committee on School Health Service Statistics.** ALAN FOORD, M.D., Chairman.

Parlor B **Committee on Rural School Health Service.** MARIAN V. MILLER, Chairman.

Parlor C **Committee on Research.** J. KEOGH RASH, Hs.D., Chairman.

Parlor E **Committee on School Health Records.** C. MORLEY SELLERY, M.D., Chairman.

THURSDAY, 11:00 A.M.

STATISTICS SECTION

Third Session—East Meeting Room, Memorial Auditorium

Presiding: ALAN E. TRELOAR, PH.D., Chairman.

W. THURBER FALES LECTURE

Speaker. LOWELL J. REED, PH.D.

THURSDAY, 12:30 P.M.

INDUSTRIAL HYGIENE SECTION

Luncheon Session—Parlor D, Statler Hotel

OUR FORTIETH ANNIVERSARY

Luncheon Speaker: R. R. SAYERS, M.D.

MEDICAL CARE SECTION

Luncheon Session—New York Room, Statler Hotel

Presiding: FRANZ GOLDMANN, M.D., Chairman.

THURSDAY, 1:30 P.M.

ENGINEERING, EPIDEMIOLOGY, FOOD AND NUTRITION, AND LABORATORY SECTIONS

Joint Session—Lounge, Memorial Auditorium

1:30–2:55 P.M.

Presiding: ALEXANDER D. LANGMUIR, M.D.

AMEBIASIS

A Water-Borne Outbreak of Amebiasis

Introduction: ALEXANDER D. LANGMUIR, M.D.

Epidemiological and Engineering Aspects. ANDREW C. OFFUTT, M.D., BLUCHER A. POOLE, C.E., AND GEORGE G. FASSNACHT.

Therapeutic Control of Carriers. R. W. SAPPENFIELD, M.D.; F. R. NICHOLAS CARTER, M.D.; CARL S. CULBERTSON, M.D.; M. M. BROOKE, Sc.D.; F. M. PAYNE, M.D.; AND WILLIAM W. FRYE. M.D.

Discussant: JUSTIN M. ANDREWS, Sc.D.

Fluorescein-Tagged Antibodies in the Diagnosis of Intestinal Amebae. MORRIS GOLDMAN, Sc.D.

3:00–5:00 P.M.

Presiding: ERWIN NETER, M.D.

ESCHERICHIA COLI DIARRHEA IN INFANTS

Panel Discussion

Introduction: ERWIN NETER, M.D.

Serology and Identification of Escherichia coli. WILLIAM H. EWING, PH.D.

Incidence of Serologic Types of Escherichia coli Associated with Infantile Diarrhea Among Pediatric Patients in the Denver Area. C. D. GRABER.

Studies on the Etiology of an Outbreak of Infantile Diarrhea. LT. COLONEL ROBERT B. LINDBERG; VIOLA M. YOUNG, PH.D.; CAPTAIN W. DEAN BELNAP; AND JOEL WARREN, PH.D.

Treatment of the Disease and Control of Epidemics. WARREN E. WHEELER, M.D.

Discussants:

S. J. KOEGLER, M.D.
C. S. STULBERG, PH.D.

THURSDAY, 2:30 P.M.

DENTAL HEALTH, HEALTH OFFICERS, AND INDUSTRIAL HYGIENE SECTIONS

Joint Session—North Hall, Memorial Auditorium

Presiding: WARREN A. COOK.

Public Health Aspects of Fluoro-Chemicals. ROBERT A. KEHOE, M.D. AND EDWARD J. LARGENT.

A Radiation Program in a State Health Department—The New Jersey Demonstration. DANIEL BERGSMA, M.D., AND HENRY J. RECHEN.

Atmospheric Pollution: A Growing Problem in Public Health. (Speaker to be announced.)

ENGINEERING SECTION

Third Session—East Meeting Room, Memorial Auditorium

Presiding: JUSTIN M. ANDREWS, SC.D.

MAN AND AIR

Air as Our Environment. T. WILLIAM LESTER, JR., M.D.

Remedial Measures in Air Pollution Which Have Been Taken by Industry, Including Discussion of Costs. JAMES W. HAMMOND.

Air Pollution Control Research at the Robert A. Taft Sanitary Engineering Research Center. VERNON G. MACKENZIE.

Toxicological Aspects of Atmospheric Pollution. NORTON NELSON.

EPIDEMIOLOGY AND STATISTICS SECTIONS

Joint Session—Lecture Room, Memorial Auditorium

Presiding: ALAN E. TRELOAR, PH.D.

METHODS AND RESULTS OF CHRONIC DISEASE STUDIES

Cancer Morbidity Surveys: A Tool for Testing Theories of Cancer Etiology. HAROLD F. DORN, PH.D.

Epidemiological Approaches to Coronary Disease. J. N. MORRIS, M.R.C.P., D.P.H.

A Historical Study of Disposition of First Admissions to a State Mental Hospital. MORTON KRAMER, D.SC., HYMAN GOLDSTEIN, PH.D., ROBERT L. ISRAEL, M.D., AND NELSON JOHNSON.

(Another paper to be announced.)

THURSDAY, 2:30 P.M.

LABORATORY SECTION

Third Session—West Meeting Room, Memorial Auditorium

Presiding: C. A. PERRY, SC.D., AND JOSEPH D. ARONSON, M.D.

STATE EVALUATION OF LABORATORY PROGRAMS AND NEWER STUDIES IN ACID-FAST AND FUNGI PROBLEMS

Conducting Evaluation Studies on Quantitative Laboratory Determinations. NELL F. HOLLINGER, PH.D.

Newer Studies on the Epidemiology of Fungous Infections of the Feet. RUDOLF L. BAER, M.D., STANLEY A. ROSENTHAL, PH.D., JEROME C. LITT, M.D., HYMEN ROGACHEFSKY, M.D., AND DOMENICA FURNARI.

Discussants:

EARL D. OSBORNE, M.D.
CHARLES R. REIN, M.D.

The Growth, Characteristics, Virulence, and Cytochemical Properties of Tubercle Bacilli Recovered from Patients Treated with Isoniazid. ROBERT A. PATNODE, PH.D.

The Relationship of Degree of Catalase Activity to Isoniazid Sensitivity and Guinea Pig Virulence of Primary Cultures of M. tuberculosis. LENORE R. PEIZER.

The Isolation and Identification of Pathogenic Fungi in Sputum. JOSEPH M. KURUNG.

MATERNAL AND CHILD HEALTH, PUBLIC HEALTH NURSING, AND SCHOOL HEALTH SECTIONS, AND THE AMERICAN SCHOOL HEALTH ASSOCIATION

Joint Session—Assembly Hall, Memorial Auditorium

Presiding: EDWARD DAVENS, M.D.

SPECIAL PROBLEMS OF HANDICAPPED CHILDREN

Experiences in Community Organization to Serve the Child with Orthopedic Conditions. LOUIS SPEKTER, M.D.

Recent Trends in Education of the Blind. GEORGIE LEE ABEL.

An Appraisal of Philadelphia's Facilities for Partially Seeing Children. RALPH C. LANCIANO, M.D.

Mental Retardation as a Public Health Problem. JOSEPH WORTIS, M.D.

New Horizons in Education of the Handicapped Child. WILLIAM M. CRUICKSHANK, PH.D.

Discussion Leader: MIRAM WHITAKER, R.N.

THURSDAY, 2:30 P.M.

MEDICAL CARE SECTION

Fourth Session—New York Room, Statler Hotel

COMPREHENSIVE MEDICAL CARE: NEXT STEPS

Panel Discussion

Moderator: FRANZ GOLDMAN, M.D.

Participants:

ODIN W. ANDERSON, PH.D.
JAMES ANDREWS, JR.
PEARL BIERMAN
CHARLES G. HAYDEN, M.D.
RUSSEL V. LEE, M.D.
RALPH T. MURRAY
SIDNEY SHINDELL, M.D.
HELEN E. WALSH
MARY S. WEAVER
BARBARA WILCOX, R.N.

Summary: JONAS N. MULLER, M.D.

THURSDAY, 5:00 P.M.

ASSOCIATION OF THE ALUMNI OF THE COLUMBIA UNIVERSITY SCHOOL OF PUBLIC HEALTH

Social Hour, 5:00–7:00 P.M., Parlors B and C, Statler Hotel

All former students are invited.

LABORATORY SECTION

Social Hour, 5:00–7:00 P.M., Georgian Room, Statler Hotel

UNIVERSITY OF CALIFORNIA PUBLIC HEALTH ALUMNI ASSOCIATION

Social Hour, 5:00–7:00 P.M., Parlor A, Statler Hotel

THURSDAY, 8:30 P.M.

SECOND GENERAL SESSION

Grand Ballroom, Statler Hotel

Presiding: HUGH R. LEAVELL, M.D., President, American Public Health Association.

Presentation of the Lasker Awards of the American Public Health Association for 1954.

Announcement of New Officers, Resolutions.

Dancing (informal).

FRIDAY, 8:00 A.M.

DIVISION OF INTERNATIONAL HEALTH, U. S. PUBLIC HEALTH SERVICE

Breakfast Session—Buffalo Room, Statler Hotel

International Health Round-Up Breakfast for All Who Have Done Health Work of Any Kind Abroad

Whether you have worked in Europe, in the Near or Far East, in Africa or in neighboring South America, plan to be present and exchange experiences with your friends. It will be a good opportunity to learn what they have been doing and to hear stories from other parts of the world.

FRIDAY, 9:30 A.M.

DENTAL HEALTH SECTION

Second Session—Parlor D, Statler Hotel

Presiding: POLLY AYERS, D.D.S., Chairman.

Educational Technics Useful in the Promotion of Dental Health. SHIRLEY H. DWYER, D.D.S.

Television and Radio Presentation Technics Especially Useful in the Promotion of Dental Health. NEAL L. MOYLAN.

Interpretation of a Group Experience in the Receipt of Dental Maintenance Care. SAMUEL S. HERMAN, D.D.S., AND WALTER J. PELTON, D.D.S.

The Woonsocket, Rhode Island, Dental Care Program. FRANK E. LAW, D.D.S.

Dental Research Plans for the Clinical Center at the Institutes of Health. RALPH LLOYD, D.D.S.

FRIDAY, 9:30 A.M.

ENGINEERING SECTION

Fourth Session—West Meeting Room, Memorial Auditorium

Presiding: DWIGHT F. METZLER, C.E., Chairman.

OBJECTIVES IN SANITATION PROGRAMS, LOCAL AND STATE

Development of Objectives for Public Health Sanitary Engineering Activities. GEORGE O. PIERCE.

Opportunities in Environmental Sanitation in a University Health Service Program. RICHARD G. BOND.

Organization and Administration of Local Sanitation Programs with Emphasis on the Administration of Personnel. CHARLES C. SPENCER.

The Role of Health Departments in Public Works Programs. HAROLD M. ROMER, C.E.

Practical Application of Ultraviolet Radiation in Purification of Naturally Contaminated Water. THADDEUS D. LABECKI, M.D.

ENGINEERING, EPIDEMIOLOGY, FOOD AND NUTRITION, AND INDUSTRIAL HYGIENE SECTIONS

Joint Session—Assembly Hall, Memorial Auditorium

Presiding: FRANK PRINCI, M.D.

THE PUBLIC HEALTH ASPECTS OF THE NEWER INSECTICIDES

The Present Status of Our Knowledge of DDT Intoxication. WAYLAND J. HAYES, JR., M.D.

Discussant: LEMUEL C. MCGEE, M.D.

Toxicity Criteria Used in Judging the Labeling of Pesticides. JUSTUS C. WARD.

Discussant: ROBERT A. KEHOE, M.D.

What the New Pesticides Mean to Us. H. L. HALLER, PH.D.

Discussant: DONALD R. JOHNSON.

Current Knowledge Concerning the Toxicity of the Cholinesterase Inhibitor Insecticides. L. W. HAZLETON, PH.D.

Discussant: J. H. WOLFSIE, M.D.

FRIDAY, 9:30 A.M.

FOOD AND NUTRITION AND HEALTH OFFICERS SECTIONS

Joint Session—North Hall, Memorial Auditorium

Presiding: ROGER F. SONDAG, M.D.

NUTRITION SERVICES IN INSTITUTIONS

Nutritional Needs of Institutionalized Patients. JAMES M. HUNDLEY, M.D.

Attending the Nutritional Needs of Nursing Home Patients—Theory and Practice. JOSEPH H. KINNAMAN, M.D., ELIZABETH M. AGNEW, JOHN H. BROWE, M.D., AND RUTH N. NELSON, R.N.

Institutional Feeding—A Challenge. MARGARET DUNHAM.

The Health Department's Responsibility for Providing Nutrition Services to Institutions. RALPH E. DWORK, M.D.

MATERNAL AND CHILD HEALTH AND STATISTICS SECTIONS

Joint Session—Lounge, Memorial Auditorium

Presiding: ALAN E. TRELOAR, PH.D.

STATISTICAL APPROACHES TO FETAL AND NEONATAL DEATH AND DISABILITY

Factors in Fetal and Neonatal Mortality. JACOB YERUSHALMY, PH.D.

Fetal, Neonatal, and Perinatal Mortality in New York City. JEAN PAKTER, M.D., AND CARL ERHARDT.

Completeness and Accuracy of Medical Information Recorded on Birth Certificates. ELLA OPPENHEIMER, M.D.

Discussant: ELIZABETH PARKHURST.

Trends in Familial Susceptibility to Perinatal Loss in New York State. EDWARD R. SCHLESINGER, M.D., AND NORMAN C. ALLAWAY.

Relationships Between Pregnancy Experience and Certain Neurological Diseases. ABRAHAM M. LILIENFELD, M.D., AND BENJAMIN PASAMANICK, M.D.

MEDICAL CARE SECTION

Fifth Session—East Meeting Room, Memorial Auditorium

Presiding: S. J. AXELROD, M.D.

Issues Raised by Labor Health and Welfare Plans. JOHN M. BRUMM.

The Work of a Research Unit in Social and Preventive Medicine. J. N. MORRIS, M.R.C.P., D.P.H.

Medical Care of the Needy in Rhode Island: Experience with a Pooled Fund. P. JOSEPH PESARE, M.D.

Experience with the Home Care of Cardiac Patients. HENRY J. BAKST, M.D., AND EDWARD F. MARRA, M.D.

FRIDAY, 9:30 A.M.

SCHOOL HEALTH SECTION AND THE AMERICAN SCHOOL HEALTH ASSOCIATION

Fourth Session—Empire State Room, Statler Hotel

Presiding: CHARLES C. WILSON, M.D.

Evaluations of the Massachusetts Vision Test.
The Oregon Study. ELEANOR B. GUTMAN, M.D.
The Danbury Study. HOLLIS M. LEVERETT.
Discussant: DAVID VAN DER SLICE, M.D.

A Screening Program for the Detection of Hearing Loss in Preschool Children. WILLIAM E. MOSHER, M.D., AND ADFUR E. MAINES, M.D.
Discussant: WILLIAM E. AYLING, M.D.

Changes in Cardiac Classification Among Restricted and Nonrestricted Post-rheumatic Fever Children in San Francisco Public Schools. RAYMOND G. NEBELUNG, DR.P.H.
Discussant: C. L. OUTLAND, M.D.

Committee Reports (five minutes each):
Evaluation. WESLEY P. CUSHMAN, D.ED.
Hearing Conservation. MILDRED E. DOSTER, M.D.
Rural School Health Services. MARIAN V. MILLER.
Research. J. KEOGH RASH, HS.D.
Secondary School Health Services. J. ROSWELL GALLAGHER, M.D.
School Health Records. C. MORLEY SELLERY, M.D.
School Health Service Statistics. ALAN FOORD, M.D.
School Nursing. FLORENCE L. FOGLE, R.N.

FRIDAY, 12:30 P.M.

MEETING OF ALL SECTION COUNCILS WITH THE EDITORIAL BOARD

Luncheon Session—Niagara Room, Statler Hotel

FRIDAY, 2:30 P.M.

ASSOCIATION SYMPOSIUM

Second Session—Grand Ballroom, Statler Hotel

THE IMPACT OF SUBURBANIZATION ON PUBLIC HEALTH

What are the implications of the trend to suburbia on public health principles and practices? How should program concepts, goals, and activities be modified?

These and other questions from Association members will be examined by the panel of health workers, sociologists, and public administrators who reviewed the basic data of the First Session on Wednesday.

A distinguished public health statesman will cast up a balance sheet of the challenges and opportunities facing public health personnel and programs.

MEETINGS OF THE SECTION COUNCILS

Some of the Sections have scheduled meetings of their Councils at announced hours and in announced places. Others will depend upon getting their Councils together on an informal basis whenever the opportunity presents itself.

Scheduled Section Council meetings are as follows:

Dental Health:	Tuesday, 8:00 A.M. (not a breakfast), Grover Cleveland Room, Statler
Engineering:	Sunday, 7:30 P.M., Mr. Sudderth's room, Statler
	Tuesday, 8:00 A.M., breakfast, Parlor G, Statler
	Friday, 8:00 A.M., breakfast, Parlor C, Statler
Epidemiology:	Tuesday, 5:30 P.M., Dr. Phair's room, Statler
Food and Nutrition:	Tuesday, 9:30 A.M., Parlor G, Statler
	Thursday, 5:00 P.M., Room 316, Statler
Medical Care:	Tuesday, 11:30 A.M., Lounge, Memorial Auditorium (at the close of the first session of the Section)
	Tuesday, 4:30 P.M., Lecture Room, Memorial Auditorium (at the close of the second session of the Section)
Public Health Education:	Sunday, 7:00 P.M., Parlor G, Statler Thursday, 7:00 P.M., Room 326, Statler
School Health:	Tuesday, 4:30 P.M. (at the close of the joint session with Dental Health, Food and Nutrition and other Sections.)
	Thursday, 4:30 P.M. (at the close of the joint session with Maternal and Child Health and Public Health Nursing Sections.)

NOMINATIONS FOR SECTION OFFICES

Following are lists of nominations for certain Sections that were submitted by the Section Nominating Committees in time for publication in the September Journal. All nominees are Fellows of the respective Sections as required in the Constitution and By-laws of the Association. The terms of office are for one year unless otherwise stated.

The By-laws provide that "if the name of any Fellow be transmitted to the Nominating Committee over the signature of ten Fellows of the Section prior to the second meeting of the Section, the Nominating Committee shall add the name of such Fellow to its own list of nominees." The second meeting referred to will be the second meeting of the Section at the forthcoming Annual Meeting. Fellows who wish to add names by petition should communicate with the Section Secretary whose name and address are also shown.

NOMINATIONS FOR SECTION OFFICES

DENTAL HEALTH SECTION NOMINATIONS

Chairman:	H. Shirley Dwyer, D.D.S.
Vice-Chairman:	John T. Fulton, D.D.S.
Secretary:	Carl L. Sebelius, D.D.S.
Member of Section Council, 5-year term:	Polly Ayers, D.D.S.
Member of Association Nominating Committee for Elective Councilors:	Donald J. Galagan, D.D.S.
Member of Association Standing Committee on Eligibility, 2-year term:	Franklin M. Erlenbach, Jr., D.M.D.

(The present Section Secretary is Carl L. Sebelius, D.D.S., 420 Sixth Avenue, North, Nashville, Tenn.)

ENGINEERING SECTION NOMINATIONS

Chairman:	Walter S. Mangold, Berkeley, Calif.
Vice-Chairman:	Earle W. Sudderth, Dallas, Tex.
Secretary:	Clarence I. Sterling, Jr., Boston, Mass.
Member of Section Council, 5-year term:	Paul W. Purdom, Philadelphia, Pa.
Member of Association Standing Committee on Eligibility, 2-year term:	Ellis S. Tisdale, Decatur, Ga.
Member of Association Nominating Committee for Elective Councilors:	Dwight F. Metzler, C.E., Lawrence, Kans.

(The present Section Secretary is Earle W. Sudderth, 4815–B Ross Ave., Dallas, Tex.)

EPIDEMIOLOGY SECTION NOMINATIONS

Chairman:	John E. Gordon, M.D., Boston, Mass.
Vice-Chairman:	Joseph A. Bell, M.D., Bethesda, Md.
Secretary:	Wendell R. Ames, M.D., Buffalo, N. Y.
Member of Section Council, 5-year term:	Philip E. Sartwell, M.D., Baltimore, Md.
3-year term:	Clayton C. Loosli, M.D., Chicago, Ill.
Member of Association Nominating Committee for Elective Councilors:	John J. Phair, M.D., Cincinnati, Ohio
Member of Association Standing Committee on Eligibility, 2-year term:	Robert F. Korns, M.D., Albany, N. Y.

(The present Section Secretary is John J. Phair, M.D., University of Cincinnati College of Medicine, Cincinnati. Ohio.)

FOOD AND NUTRITION SECTION NOMINATIONS

Chairman:	Harry W. von Loesecke, Washington, D. C.
Vice-Chairman:	Bertlyn Bosley, Ph.D., Raleigh, N. C.
Secretary:	Helen E. Walsh, San Francisco, Calif.
Member of Section Council, 5-year term:	Robert C. Hockett, Ph.D., Larchmont, N. Y.
3-year term:	Catherine M. Leamy, New York, N. Y.
Member of Association Nominating Committee for Elective Councilors:	Marjorie M. Morrison, Jacksonville, Fla.
Member of Association Standing Committee on Eligibility, 2-year term:	John H. Browe, M.D., Albany, N. Y.

(The present Section Secretary is Helen Stacey, Children's Bureau, Washington 25, D. C.)

HEALTH OFFICERS SECTION NOMINATIONS

Chairman:	J. W. R. Norton, M.D., Raleigh, N. C.
Vice-Chairman:	Robert N. Barr, M.D., Minneapolis, Minn.
Secretary:	Daniel Bergsma, M.D., Trenton, N. J.
Member of Section Council, 5-year term:	Edwin H. Jorris, M.D., Madison, Wis.
Member of Association Nominating Committee for Elective Councilors:	Clarence L. Brumback, M.D., West Palm Beach, Fla.
Member of Association Standing Committee on Administrative Practice, 3-year term:	M. Leon Bauman, M.D., Wichita, Kans.

(The present Section Secretary is Daniel Bergsma, M.D., Commissioner of Health, Trenton, N. J.)

LABORATORY SECTION NOMINATIONS

Chairman:	S. Edward Sulkin, Ph.D., Dallas, Tex.
Vice-Chairman:	Col. Dwight M. Kuhns, MC, Washington, D. C.
Secretary:	Albert V. Hardy, M.D., Jacksonville, Fla.
Member of Section Council, 5-year term:	Myrtle Greenfield, Albuquerque, N. M.
Member of Association Nominating Committee for Elective Councilors:	J. V. Irons, Sc.D., Austin, Tex.
Member of Association Standing Committee on Eligibility, 2-year term:	Edmund K. Kline, Dr.P.H., Olean, N. Y.

(The present Section Secretary is Col. Dwight M. Kuhns, MC, Room 2836, Main Navy Bldg., Washington, D. C.)

MATERNAL AND CHILD HEALTH SECTION NOMINATIONS

Chairman:	Martha L. Clifford, M.D., Hartford, Conn.
Vice-Chairman:	R. Gerald Rice, M.D., Cambridge, Mass.
Secretary:	Alfred Yankauer, M.D., Albany, N. Y.
Member of Section Council, 5-year term:	Samuel M. Wishik, M.D., Pittsburgh, Pa.
Member of Association Nominating Committee for Elective Councilors:	Myron E. Wegman, M.D., Washington, D. C.

(The present Section Secretary is Alfred Yankauer, M.D., 39 Columbia St., Albany 7, N. Y.)

MEDICAL CARE SECTION NOMINATIONS

Chairman:	Paul A. Lembcke, M.D., Baltimore, Md.
Vice-Chairman:	Frederick D. Mott, M.D., Washington, D. C.
Secretary:	S. J. Axelrod, M.D., Ann Arbor, Mich.
Member of Section Council, 5-year term:	Milton Terris, M.D., Buffalo, N. Y.
Member of Association Nominating Committee for Elective Councilors:	Louis S. Reed, Ph.D., Washington, D. C.
Member of Association Standing Committee on Eligibility, 2-year term:	Lucille M. Smith, Washington, D.C.

(The present Section Secretary is S. J. Axelrod, M.D., School of Public Health, University of Michigan, Ann Arbor, Mich.)

PUBLIC HEALTH EDUCATION SECTION NOMINATIONS

Chairman:	Ann W. Haynes, San Francisco, Calif. Cassie B. Smith, Jackson, Miss.
Vice-Chairman:	Louisa E. Haas, Washington, D. C. Ben D. Kiningham, Jr., Springfield Ill.
Secretary:	Lucretia A. Saunders, San Francisco, Calif. Ralph T. Fisher, Trenton, N. J.
Member of Section Council, 5-year term:	Elmer J. Anderson, Buffalo, N. Y. Levitte B. Mendel, San Jose, Calif.
Member of Association Nominating Committee for Elective Councilors:	Mabel E. Rugen, Ph.D., Ann Arbor, Mich.
Member of Association Standing Committee on Eligibility, 2-year term:	Mary Lou Skinner, New York, N. Y. William Griffiths, Ph.D., Berkeley, Calif.

(The present Section Secretary is Louisa J. Haas, 2500 Wisconsin Ave., N.W., Washington 7, D.C.)

SCHOOL HEALTH SECTION NOMINATIONS

Chairman:	H. F. Kilander, Ph.D., New York, N. Y. Charles C. Wilson, M.D., New Haven, Conn.
Vice-Chairman:	Franklin M. Foote, M.D., New York, N. Y. Ruth E. Boynton, M.D., Minneapolis, Minn.
Secretary:	Arthur L. Harnett, Jr., Ed.D., State College, Pa. Elena Sliepcevich, Springfield, Mass.
Member of Section Council, 5-year term:	Howard S. Hoyman, Ed.D., Urbana, Ill. Edward B. Johns, Ed.D., Los Angeles, Calif.
Member of Association Nominating Committee for Elective Councilors:	Florence L. Fogle, R.N., Columbus, Ohio S. S. Lifson, New York, N. Y.

(The present Section Secretary is Franklin M. Foote, M.D., 1790 Broadway, New York 19, N. Y.)

STATISTICS SECTION NOMINATIONS

Chairman:	Carl L. Erhardt, New York, N. Y. Alan E. Treloar, Ph.D., Minneapolis, Minn.
Vice-Chairman:	John W. Fertig, Ph.D., New York, N. Y. Matthew Taback, Sc.D., Baltimore, Md.
Secretary:	William M. Haenszel, Bethesda, Md.
Member of Association Nominating Committee for Elective Councilors:	Howard West, Washington, D. C.
Member of Section Council, 5-year term:	Margaret F. Shackelford, Oklahoma City, Okla. Mortimer Spiegelman, New York, N. Y.

(The present Section Secretary is William M. Haenszel, National Cancer Institute, Bethesda, Md.)

Association News

EIGHTY-SECOND ANNUAL MEETING
AMERICAN PUBLIC HEALTH ASSOCIATION
BUFFALO, N. Y., OCTOBER 11–15, 1954

APPLICANTS FOR FELLOWSHIP

In accordance with the By-laws of the Association, the names of applicants for Fellowship are officially published herewith. They have requested affiliation with the Sections indicated. Official action by the various Section Councils, the Executive Board (acting on unaffiliated applications) the Committee on Eligibility, and the Governing Council will take place during the Buffalo Annual Meeting.

Health Officers Section

Jean Crowley Antonmattei, M.D., M.P.H., Deputy Commissioner of Health, Milwaukee Health Dept., Milwaukee, Wis.

Walter Erwin Bock, Ph.D., Asst. to the Commissioner, New York State Dept. of Health, Albany, N. Y.

Oscar Davis, M.D., M.P.H., District Medical Director, Pennsylvania State Dept. of Health, Lancaster, Pa.

Donald G. Dickson, M.D., M.P.H., Commissioner of Health, Clinton County Dept. of Health, Plattsburgh, N. Y.

Herbert R. Domke, M.D., M.P.H., Commissioner, St. Louis County Health Dept., Clayton, Mo.

George Nelson Furbeck, M.D., M.P.H., Health Unit Director, Louisiana State Dept. of Health, Tangipahoa Parish Health Unit, Amite, La.

Samuel Alan Graham, Jr., M.D., M.P.H., Health Officer, Martin County Health Dept., Williamston, N. C.

William Congdon Harrison, M.D., M.P.H., Director, Delta-Menominee District Health Dept., Escanaba, Mich.

Victor Sadler Hawkes, M.R.C.S., L.R.C.P., D.P.H., Medical Director, Provincial Health Unit, Selkirk, Manitoba, Canada

Kenneth Iain Eachainn MacLeod, M.B., Ch.B., M.P.H., Medical Director, Nashoba Associated Boards of Health, Ayer, Mass.

Harold Joseph Magnuson, M.D., M.P.H., Director, Venereal Disease Experimental Laboratory, U. S. Public Health Service, Chapel Hill, N. C.

Joseph Thomas Marshall, M.D., M.P.H., Director, Div. of Chronic Disease, New Mexico Dept. of Public Health, Santa Fe, N. M.

Henry Gouhart Mello, M.D., Health Officer and Director, Vallejo-Solano County Health Dept., Vallejo, Calif.

Elton Smith Osborne, Jr., M.D., M.P.H., Deputy Regional Medical Director, U. S. Public Health Service, Region III, Washington, D. C.

John Ralston Pate, M.D., M.P.H., LL.B., Director, Bureau of Disease Control, District of Columbia Dept. of Public Health, Washington, D. C.

Stonewall J. Phillips, M.D., M.P.H., President, State Board of Health and State Health Officer, State of Louisiana Dept. of Health, New Orleans, La.

Laboratory Section

Libero Ajello, Ph.D., Senior Scientist in Charge of Mycology Unit, CDC, U. S. Public Health Service, Chamblee, Ga.

Earle Kirkpatrick Borman, M.S., Chief, Laboratory Services, Connecticut State Dept. of Health, Hartford, Conn.

Evan Theodore Bynoe, Ph.D., Chief, Bacteriological Laboratory Services, Dept. of National Health and Welfare, Ottawa, Canada

Edward Charles Curnen, Jr., M.D., Professor and Chairman of Dept. of Pediatrics, Univ. of North Carolina School of Medicine, Chapel Hill, N. C.

Carl Edward Duffy, Ph.D., Professor and Head of Dept. of Bacteriology and Parasitology, Univ. of Arkansas Medical School, Little Rock, Ark.

Norman William Elton, M.D., Commanding Officer, Chemical Corps, Medical Laboratories, Army Chemical Center, Md.

Thomas Hutcheson Grainger, Jr., Ph.D., Assoc. Professor of Bacteriology, Lehigh Univ., Bethlehem, Pa.

George A. Hottle, Ph.D., Scientist Officer, National Institutes of Health, Bethesda, Md.

Perry Cyrus Martineau, M.D., M.S. (Path.), Director of Laboratories, City of Detroit Dept. of Health, Mich.

Morris Schaeffer, M.D., Ph.D., Medical Director in Charge, Virus and Rickettsia Section, CDC, U. S. Public Health Service, Montgomery, Ala.

Mola Michael Sigel, Ph.D., Chief, Reference Diagnosis and Research Unit, CDC, U. S. Public Health Service, Montgomery, Ala.

Alfred Julius Weil, M.D., Director, Dept. of Bacteriology, Bronx Hospital, Bronx, N. Y.

Statistics Section

Helen Christina Chase, M.Sc., Biostatistician, New York State Dept. of Health, Albany, N. Y.

Gertrude Mary Cox, M.S., Director, Institute of Statistics, North Carolina State College, Raleigh, N. C.

Engineering Section

Joseph P. Blanks, B.C.E., Sanitation Consultant, Orkin Institute of Industrial Sanitation, Atlanta, Ga.

Arve Hubert Dahl, M.S.S.E., Senior Sanitary Engineer, State of California Dept. of Public Health,, San Francisco, Calif.

Frederick Kenneth Erickson, M.S.S.E., Director, Sanitation Div., Federal Civil Defense Administration, Washington, D. C.

Keith Arnold Fitch, A.B., Exec. Director, Orkin Institute of Industrial Sanitation, Atlanta, Ga.

Ralph Edward Fuhrman, D.E., Deputy Director of Sanitary Engineering, District of Columbia Government, Washington, D. C.

Tom Schulte Gable, M.P.H., Public Health Engineer, Univ. Health Services, Univ. of Nebraska, Lincoln, Neb.

Norman Ferdinand Hauret, M.P.H., Senior Sanitarian, Los Angeles County Health Dept., Los Angeles, Calif.

Harvey F. Ludwig, M.S.S.E., Sanitary Engineer Director, U. S. Public Health Service, Washington, D. C.

Frederick Wilson Mallon, B.S.C.E.-S.E., Public Health Engineer, Chief, Housing Section, Dept. of Public Health, Washington, D. C.

Morris A. Shiffman, D.V.M., M.P.H., Chief, Milk and Food Section, Philadelphia Dept. of Public Health, Philadelphia, Pa.

Donald Loesch Snow, M.S.C.E., Chief, Sanitary Engineering Branch, National Institutes of Health, Bethesda, Md.

Ira Washington Southern, M.P.H., Sanitarian in Charge of Preventive Medicine, Arabian American Oil Company, Ras Tanura, Saudi Arabia

Guy Morris Tate, Jr., M.S.S.E., Director, Bureau of Sanitation, Jefferson County Health Dept., Birmingham, Ala.

Hardy Watson, C.E., District Sanitarian, State Health Dept., Lawton, Okla.

Charles Mayfield White, B.E., M.P.H., Chief, Insect and Rodent Control Section, North Carolina State Board of Health, Raleigh, N. C.

Industrial Hygiene Section

Daniel Carl Braun, M.D., Medical Director, Industrial Hygiene Foundation, Mellon Institute, Pittsburgh, Pa.

Gilbeart Hooper Collings, Jr., M.D., M.P.H., Chief, Occupational Health Branch, Tennessee Valley Authority, Wilson Dam, Ala.

Lester V. Cralley, Ph.D., Chief Industrial Hygienist, Aluminum Company of America, Pittsburgh, Pa.

Lewis William Fetzer, M.D., Phil.D., Ch.E., Professor of Biology, Dallas Univ., Dallas, Tex.

Earl Forest Lutz, M.D., Assoc. Medical Director, General Motors Corporation, Detroit, Mich.

Otto Tod Mallery, Jr., M.D., Director, Institute of Industrial Health, Univ. of Michigan, Ann Arbor, Mich.

Robert P. Sim., M.D., M.P.H., Asst. Medical Director, Esso Standard Oil Company, New York, N. Y.

C. Richard Walmer, M.D., Managing Director, Industrial Hygiene Foundation, Mellon Institute, Pittsburgh, Pa.

Eugene L. Walsh, M.D., Ph.D., Assoc. Medical Director, International Harvester Company and private practice, Glenview, Ill.

Food and Nutrition Section

Pearl Shackelford Camstra, M.S., Chief, Nutrition Section, Chicago Board of Health, Chicago, Ill.

Gretchen Evon Collins, Ed.M., Nutrition Consultant, Florida State Board of Health, Tallahassee, Fla.

Harry Gilbert Day, Sc.D., Professor and Chairman, Dept. of Chemistry, Indiana Univ., Bloomington, Ind.

Beatrice Finkelstein, M.Sc., Nutritionist, U. S. Air Force, Dayton, Ohio

Maryrose Jordan, M.S., Public Health Nutritionist, Westchester County Dept. of Health, White Plains, N. Y.

Jean Atkinson Smail Ritchie, M.S., Regional Nutrition Officer for South and East Asia, FAO, Rome, Italy

Charlotte Marie Young, Ph.D., Professor of Medical Nutrition, Cornell Univ. School of Nutrition, Ithaca, N. Y.

Maternal and Child Heath Section

Margot D. Hartmann, M.D., M.P.H., Chief, Division of Child Hygiene, Ohio Dept. of Health, Columbus, Ohio

Georgia Burnetta Perkins, M.D., M.P.H.,

Asst. Professor of Preventive Medicine and Public Health, Univ. of Colorado School of Medicine, Denver, Colo.

Jack Sabloff, M.D., Director, Divisions of Maternal-Child Health and Crippled Children, Delaware State Board of Health, Dover, Del.

Public Health Education Section

Said Abdou, M.B., Ch.B., D.P.H., D.T.M., and H., M.D., Professor of Public Health, Kassel Ainy Faculty of Medicine, Cairo, Egypt

Clyde E. Arbegast, M.S., Ed., Exec. Director, Heart Assn. of Maryland, Baltimore, Md.

Lillian Hyacinth Renee Bajda, M.P.H., District Consultant, Community Health Organization, New Jersey State Dept. of Health, Northern District, South Orange, N. J.

John E. Baker, Jr., M.P.H., Chief, Health Education Section, North Carolina State Board of Health, Raleigh, N. C.

Alma Jackson Baynard, M.P.H., Health Education Consultant, Dept. of Public Health, Philadelphia, Pa.

Annette S. Boutwell, M.S.P.H., Health Education Consultant, North Carolina Medical Society, Raleigh, N. C.

J. Edgar Caswell, M.A., Chief, Public Health Education, District of Columbia Dept. of Public Health, Washington, D. C.

Cecilia Catherine Conrath, M.P.H., Health Education Consultant, U. S. Public Health Service, Kansas City, Mo.

Thomas Kirk Cureton, Jr., Ph.D., Professor of Physical Education and Director of Physical Fitness Laboratory, Univ. of Illinois, Urbana, Ill.

Max L. Durfee, M.D., M.S.P.H., Health Director, Oberlin College, Oberlin, Ohio

Thomas Fansler, M.A., Director, Home Safety Div., National Safety Council, Chicago, Ill.

Mary Margaret Fitzgerald, M.S., Assoc. in Health Education, American Cancer Society, Massachusetts Div., Springfield, Mass.

Alice Olivia Ford, M.S., Asst. Professor in Dental Hygiene, Howard Univ. College of Dentistry, Washington, D. C.

Gerald D. Fry, M.A., Executive Director, Columbus Tuberculosis Society, Columbus, Ohio

Agnes E. Gerding, M.P.H., Assoc., Program Development Div., National Tuberculosis Assn., New York, N. Y.

Marie Goulett, Ph.B., Exec. Secy., Health Assn. of Rochester and Monroe County, Rochester, N. Y.

Anne Ross Grant, M.P.H., Health Educator, Canadian Tuberculosis Association, Ottawa, Ontario, Canada

Eleanor V. Green, M.A., Consultant-Patient Services, State Charities Aid Assn., New York, N. Y.

Margaret Jane Broderson Idema, M.S.P.H., Chief, Health Education Section, U. S. Public Health Service, Washington, D. C.

Johanne Uhrenholdt Johnson, M.S.P.H., Director, Adult Education, District of Columbia Tuberculosis Assn., Washington, D. C.

Lloyd Meredith Jones, Ph.D., Professor of Health and Physical Education, Pennsylvania State Univ., State College, Pa.

George Aloysius Kenny, M.P.H., Director of Health Education, Rhode Island State Health Dept., Warwick, R. I.

George B. Larson, Asst. Director, Bureau of Exhibits, American Medical Association, Chicago, Ill.

Leah Lehrer, M.P.H., Consultant in Health Education, Tuberculosis Institute of Chicago and Cook County, Chicago, Ill.

Jean Margaret Martin, M.P.H., Public Health Educator, U. S. Public Health Service, Monrovia, Liberia

Pauline Kitts Matthis, M.P.H., Assoc. in Program Development, National Tuberculosis Assn., New York, N. Y.

Blanche R. Miller, R.N., M.P.H., Director, Health Education, Anti-Tuberculosis League of Cincinnati, Cincinnati, Ohio

Frances Mozell Neel, A.B. Ed., Div. of Field Service, Florida Tuberculosis and Health Assn., Jacksonville, Fla.

Nancy Clare Ott, M.P.H., Health Educator, U. S. Public Health Service (currently on loan to California State Dept. of Health), San Marino, Calif.

Gloria Russo, M.S.H.E., Health Educator, Orange County Health Dept., Santa Ana, Calif.

Paul William Schuster, M.S.P.H., Consultant, Public Health Education, Ohio Dept. of Health, Cuyahoga Falls, Ohio

Joseph A. Staton, M.P.H., Public Health Educator, USOM/Lebanon-Public Health, American Embassy-Beirut, c/o State Dept., Washington, D. C.

George McDonald Stenhouse, M.S.P.H., Director, Div. of Public Health Education, Georgia Dept. of Public Health, Decatur, Ga.

Dorothy A. Stocker, R.N., M.P.H., Director, Div. of Public Health Education, Delaware State Board of Health, Dover, Del.

Henriette Strauss, M.S., Senior Public Health Educator, City of Detroit Dept. of Health, Mich.

Edythe Lauretta Tucker, M.Ed., Field Representative, Washington Tuberculosis Assn., Seattle, Wash.

John L. Wallace, M.A., Secy., Christmas Seal Sale and Heart Fund, New York State Committee on Tuberculosis and Public Health, Ithaca, N. Y.

Helen Wheeler, M.P.H., Case Aide and Case Worker, State Relief Administration, Daly City, Calif.

Paul Charles Williamson, Exec. Secy., Iowa Tuberculosis and Health Assn. and Iowa Heart Assn., Ankeny, Iowa

Maude Josephine Yancey, Ed.D., Assoc. Professor, Div. of Health and Physical Education, Southern Univ., Baton Rouge, La.

Public Health Nursing Section

Amy Mabel Erickson, R.N., M.A., Asst. Professor, State Univ. of New York, Syracuse, N. Y.

Anna Judith Kalmanowitz, R.N., M.A., Director of School and Nursing Service, Beth Israel Hospital, Boston, Mass.

Anna Rettie Pollock, R.N., B.S., Director, Visiting Nurse Service, Spokane City Health Dept., Spokane, Wash.

Clara E. Richmond, M.A. (PHN), Nursing Consultant, Health Insurance Plan of Greater New York, New York, N. Y.

Jean South, M.A., Director and Public Health Nursing Consultant, Tuberculosis Nursing Advisory Service of the National League for Nursing, New York, N. Y.

Muriel Morgan Young, R.N., M.P.H., Mental Health Consultant, Kansas State Board of Health, Topeka, Kans.

Epidemiology Section

Merle Bundy, M.D., M.P.H., Chief Works Physician, Pittsburgh Works Div., Jones and Laughlin Steel Corporation, Pittsburgh, Pa.

Carlos Luis Gonzalez, M.D., Dr.P.H., Asst. Director, Pan American Sanitary Bureau, Washington, D. C.

Col. George W. Hunter, III, MSC, USA, (Ph.D.), Chief, Medical Zoology, Fourth Army Area Medical Laboratory, Fort Sam Houston, Tex.

Johannes Ipsen, M.D., M.P.H., Superintendent, Institute of Laboratories, Massachusetts Dept. of Public Health, Jamaica Plains, Mass.

Glen Ronald Leymaster, M.D., M.P.H., Professor and Head of Dept. of Preventive Medicine, Univ. of Utah College of Medicine, Salt Lake City, Utah

Col. Joseph H. McNinch, M.D., M.P.H., Chief Preventive Medicine Officer, Army Forces, Far East, APO 343, San Francisco, Calif.

Gilcin F. Meadors, Jr., M.D., M.P.H., Epidemiologist, U. S. Public Health Service, Silver Spring, Md.

Col. Adam J. Rapalski, M.D., M.P.H., Chief, Preventive Medicine Research Branch and Administrator, U. S. Army and Armed Forces Epidemiological Board, Washington, D. C.

William Carlisle Reeves, Ph.D., M.P.H., Assoc. Professor of Epidemiology, Univ. of California, Berkeley, Calif.

School Health Section

Edward John Dvorak, M.Ed., M.P.H., School Health Consultant, Minnesota Dept. of Health, Minneapolis, Minn.

Patricia Jean Hill, M.P.H., Consultant, School Health Education, California State Dept. of Education, Sacramento, Calif.

Charles Donald Merrill, Ed.D., Instructor of Health Education, Boston Univ., Boston, Mass.

J. Keogh Rash, H.S.D., Assoc. Professor and Chairman of Dept. of Health and Safety, Indiana Univ., Bloomington, Ind.

Sara Louise Smith, Ed.D., Professor and Head of Health Education Dept., Florida State Univ., Tallahassee, Fla.

Dental Health Section

Francis A. Arnold, Jr., D.D.S., Director, National Institute of Dental Research, National Institutes of Health, Bethesda, Md.

John Ernest Chrietzberg, D.D.S., M.P.H., Director of Dental Health Services, State of Georgia Dept. of Public Health, Atlanta, Ga.

Robert A. Downs, D.D.S., M.S.P.H., Chief, Public Health Dentistry Section, Colorado State Board of Public Health, Denver, Colo.

Joseph Herbert Kauffmann, D.D.S., Chairman, Subcommittee on Radio Broadcasts, Oral Hygiene Committee of Greater New York, New York, N. Y.

Medical Care Section

Harold Aaron, M.D., Consultant, Health Insurance Plan, New York, N. Y.

Joseph Edward Barnes, M.B.A., Director, Rex Hospital, Raleigh, N. C.

Mark Berke, B.A., Director, Mt. Zion Hospital of San Francisco, San Francisco, Calif.

George S. Buis, M.B.A., Director, Course in Hospital Administration, Dept. of Public Health, Yale Univ., New Haven, Conn.

Benjamin George Dinin, M.D., Medical Superintendent, Metropolitan Hospital, New York, N. Y.

Thomas B. Fitzpatrick, M.S., Asst. Director, The Montefiore Hospital, Pittsburgh, Pa.

Frank Peter Guidotti, M.D., Medical Director, New York Hotel Trades Council and Hotel Assn. Health Center, New York, N. Y.

Norvin Charles Kiefer, M.D., M.P.H., Chief Medical Director, Equitable Life Assurance Society of the U. S., New York, N. Y.

Mildred Ada Morehead, M.D., M.P.H., Assoc. Medical Director, Health Insurance Plan, New York, N. Y.

Francis Lloyd Mussells, M.D., C.M., M.S.P.H., Exec. Director, Philadelphia General Hospital, Philadelphia, Pa.

John E. Petersen, M.Sc., Director, Health Div., Health and Welfare Council of Philadelphia, Philadelphia, Pa.

Vlad F. Ratay, Regional Representative, Office of Vocational Rehabilitation, U. S. Dept. of Health, Education and Welfare, Boston, Mass.

José E. Rechany, M.D., Assistant Director, Division of Hospitals, Dept. of Health, San Juan, Puerto Rico.

Raymond Julius Reynolds, M.P.H., Asst. Administrator, Norwalk Hospital, Norwalk, Conn.

Owen B. Stubben, M.H.A., Deputy Health Commissioner, Dept. of Public Health, Philadelphia, Pa.

Mildred F. Walker, Assoc. Administrator, Memorial Hospital Association of Kentucky, Inc., Washington, D. C.

Lt. Col. Anthony J. Zolenas, Jr., M.P.H., Acting Inspector General and Asst. Inspector General for the Army Medical Service, Office of the Surgeon General, Washington, D. C.

Unaffiliated

Andrew Francis Balkany, M.D., D.P.H., Director, West Kootenay Health Unit, Government of British Columbia, Dept. of Health, Trail, B. C., Canada

Maurice H. Bull, R.N., M.S., Administrator, Noble Hospital, Westfield, Mass.

Richard Henry Daggy, M.P.H., Ph.D., Asst. to Medical Director and Preventive Medicine Coordinator, Arabian American Oil Co., Dhahran, Saudi Arabia

Captain Henry James Donnelly, M.C., USA (M.D., D.P.H.), Preventive Medicine Officer Army Medical Service, Fort Sam Houston, Tex.

Frederick A. Evis, M.D., D.P.H., Exec. Asst. to the Minister of Health, Ontario Dept. of Health, Toronto, Ont., Canada

Roy F. Fritz, M.S., M.P.H., Acting Chief, Surveillance Section, Epidemiology Branch, CDC, U. S. Public Health Service, Atlanta, Ga.

Warfield Garson, M.D., M.P.H., Surgeon, U. S. Public Health Service, (presently assigned as Chief, Venereal Disease Control Section, North Carolina State Board of Health), Raleigh, N. C.

Colonel John Randolph Hall, M.C., USA (M.D., M.S. in Pharmacology), Medical Instructor at Command and General Staff College, Fort Leavenworth, Kans.

Major Gwilym Rhys Jones, M.C., USA (M.D., D.P.H.), Chief, Preventive Medicine Section, Fort Leonard Wood, Mo.

Beatrice G. Konheim, Ph.D., Assoc. Professor of Physiology, Hunter College, New York, N. Y.

Louis Liswood, M.B.A., Superintendent, National Jewish Hospital, Denver, Colo.

Lester Harold Lonergan, M.D., M.P.H., Assoc. Professor, Dept. of Pharmacology, College of Medical Evangelists, Loma Linda, Calif.

Anthony Agathon Mira, M.D., Medical Director, Gimbel Brothers, New York, N. Y.

Louis Rosenbaum, M.D., Examining Physician, Bureau of Tuberculosis, New York City Health Dept., New York, N. Y.

Irwin Rothman, V.M.D., D.O., Physician, Private Practice, Philadelphia, Pa.

Benno Safier, M.D., Director of Psychiatric Service, Bureau of Venereal Disease Control, San Francisco Dept. of Health, San Francisco, Calif.

Arthur William Smith, Director, Macon Hospital, Macon, Ga.

Meetings of Affiliated Societies

The following information on recent meetings of Affiliated Societies has been selected from material sent to the Association offices by officers of the affiliates. Where no other information was reported, only officers are given. It is suggested that affiliate secretaries or other officers prepare brief reports of their annual meetings, including the significant or unique highlights and the newly elected officers. There are still a number of Affiliated Societies that have had recent annual meetings from which no report of the meeting or of the new officers has been received.

California, Northern—The Northern California Public Health Association met in San Mateo on June 5. The following officers were elected: President—Marian Dingley, bacteriologist,

Contra Costa County Health Department, Richmond
Vice-President—David Frost, M.D., health officer, Alameda
Secretary—Marian Leach, associate in public health, University of California, Berkeley
Treasurer—Eugene M. Howell, public health engineer, San Mateo County Health Department, Redwood City

Georgia—At the April meeting of the Georgia Public Health Association the following officers were elected:

President—James G. Williams, D.D.S., director, Division of Dental Health, State Health Department, Atlanta
President-Elect—W. D. Lundquist, M.D., director of public health, Bullock-Bryan-Effingham-Evans Counties, Statesboro
Vice-Presidents—Patricia Cannon, director, Nursing Services, Chatham County Health Department, Savannah
Ernest B. Davies, Atlanta
Mayola S. Center, health education consultant, State Department of Health
Representative to Governing Council, APHA—Willard E. Manchester, M.D., Glynn County commissioner of health, Brunswick

Idaho—At the meeting of Idaho Public Health Association in McCall on May 7–8 the following officers were elected:

President—Frances M. Goodwin, executive secretary, Idaho Anti-Tuberculosis Association, Boise
Vice-Presidents—S. D. Simpson, M.D., Caldwell
A. Ben Wheeler, Boise
Doyle M. Loehr, M.D., Moscow
Leslie T. McCarthy, Lewiston
John McCarter, M.D., Boise
Secretary—Mrs. D. W. McDougal, Boise
Treasurer—Dorothy D. Campbell, Boise

Massachusetts—The April 29 meeting of the Massachusetts Public Health Association was its annual meeting. Eight sections each held afternoon meetings. Among the subjects discussed were "Smoking and Malignancy," "A Modern Approach to Children's Hearing Problems," and "Opportunities in Educational Television for Furthering Health Education."

The evening general session was presided over by the retiring president, Sophie C. Nelson. The speaker was Dwight Emary Harkin, M.D., surgeon of Peter Bent Brigham Hospital on the subject, "Advances in the Control of Heart Disease through Surgery." At this meeting the fifth annual Shattuck Award was presented to Ira V. Hiscock, D.Sc. chairman, Department of Public Health, Yale University (A.J.P.H. 44: 891 (July), 1954). Three members, including Edward Wright, sanitary engineer of the Masachusetts Department of Health, received 25-year membership certificates. It was also reported that 100 new members had been welcomed by the association during the year.

Officers elected were:

President—Ralph L. France, M.S., head, Department of Bacteriology and Public Health, University of Massachusetts, Amherst
President-Elect—John C. Ayres, M.D., health commissioner, Springfield
Vice-President—Alfred L. Frechette, M.D., director, Health, Hospitals, and Medical Care Division, United Community Services, Boston
Secretary—Dorothy Gullason, principal clerk, Massachusetts Health Department, Boston
Treasurer—Julia C. Sullivan, immunologist, Biologic Laboratories, Commission on Plasma Fractionation, Boston
Representative to Governing Council, APHA—Franz Goldmann, M.D., associate professor, medical care, Harvard School of Public Health, Boston

Michigan—At the annual meeting of the Michigan Public Health Association in Detroit, May 5–7, the following officers were elected:

President—Morton S. Hilbert, director, Bureau of Engineering and Sanitation, Wayne County Health Department, Eloise
Vice-President—Oscar D. Stryker, M.D., director, Macomb County Health Department, Mt. Clemens
Treasurer—LaRue L. Miller, sanitary engineer, State Department of Health, Lansing
Representative to Governing Council, APHA—Morton S. Hilbert

New York—The New York State Public Health Association met jointly with the 50th Annual Health Conference of the New York State Health Officers Association in Lake Placid, June 9–11. The third annual Hermann M. Biggs Award was presented to Marion W. Sheahan, associate director of the National League for Nursing. Two new sections were added, one for physical therapists and one on medical care.

Revised constitution and by-laws were adopted. Among the changes made are the addition of section chairmen and the immediate past president to the executive committee, formerly made up only of officers of the association. Also authorized was a mail vote as one way of electing officers and as the only method of voting on amendments.

Among the speakers at the general sessions were Martha M. Eliot, M.D., chief of the Children's Bureau, who spoke on "Our Growing Responsibilities in Child Health," and Herman E. Hilleboe, M.D., State Health Commissioner, who reviewed "Fifty Years of Public Health in New York State." One general session was devoted entirely to malignant diseases, another to viral diseases.

Officers elected are:

President—Wendell Ames, M.D., deputy commissioner, Buffalo-Erie County Health Department

President-Elect—Robert W. Osborn, executive secretary, New York State Committee on Tuberculosis and Public Health, New York City

Vice-Presidents—E. Dorothy Gordon, cancer consultant, public health nurse, State Health Department, Albany

Donald J. Dean, D.V.M., veterinary consultant, State Department of Health

Secretary—Elmer J. Anderson, director, Office of Health Education, Buffalo-Erie County Department of Health

Treasurer—Marion L. Henry, director, Business Administration, State Health Department

Interview with Dr. John F. Anderson

John F. Anderson, M.D., of New Brunswick, N. J., was president of the American Public Health Association in 1916 and is the senior surviving past president at the present time. He was interviewed on August 4 by Reginald M. Atwater, M.D., executive secretary, APHA, and by William E. Bunney, Ph.D., vice-president and director of Manufacturing Laboratories, E. R. Squibb & Sons, New York.

Dr. Anderson asked that his warm greetings be transmitted to the membership of the Association and to the Governing Council in anticipation of a large and fruitful meeting to be held in Buffalo.

Dr. Anderson, who joined the Association in 1903 and became a Charter Fellow in 1922, was reminded of the changes that have taken place in the Association since the year of his presidency, 1916. In his address that year (A.J.P.H., 6, 11:1139 (Nov.), 1916) Dr. Anderson pointed out that the Association had grown from 63 members in the year of its founding, 1872, to a membership of 1,647. The 1954 membership approaches 13,000. The circulation of the Journal was 2,400 copies in 1916 against 16,472 at the present time.

Dr. Anderson had emphasized the necessity of full-time local health officers who would be trained and given systematic experience. He pointed out how essential it was to reduce the lag between the discovery of vital facts and their application through administrative measures. He spoke of interstate and intrastate control of the milk supply and of the necessity that morbidity reporting could be improved. His final emphasis was on the necessity of some kind of health insurance, with special reference to the wage earners in the United States then numbering 30 million persons. He spoke strongly of the importance of pre-

ventive services being included in such health insurance plans.

Although Dr. Anderson is the only surviving officer from the 44th Annual Meeting, there are scores of persons then active in the Association who still are with us. Among the names appearing in Volume VI of the American Journal of Public Health were noted those of Haven Emerson, M.D., Louis I. Dublin, Ph.D., Alice Hamilton, M.D., Emery Hayhurst, M.D., Murray Horwood, Ph.D., George T. Palmer, Dr.P.H., A. W. Hedrich, D.Sc., Abel Wolman, Dr.Eng., A. J. Chesley, M.D., Michael M. Davis, Ph.D., Philip S. Platt, Ph.D., and C. D. Selby, M.D.

$3 Dues for Western Branch

At its recent annual meeting the Western Branch, APHA, voted annual membership dues of $3. Heretofore a supporting donation of $2 had been requested annually from members. The membership of the branch numbers about 2,100.

APHA membership application blank on page XLIII

SCHOOLS OF PUBLIC HEALTH ACCREDITED FOR 1954–1955

The Executive Board of the American Public Health Association has taken favorable action on the recommendation of the Committee on Professional Education concerning accreditation of schools of public health. Twelve schools are now accredited in North America. The School of Hygiene of the University of Montreal was added in December, 1953, for the academic year 1953–1954. All of the twelve schools are accredited for the Master of Public Health degree (M.P.H. in the United States; the equivalent degree at the University of Montreal and the University of Toronto is the Diploma of Public Health or D.P.H.). Nine of these institutions are accredited for the degree of Doctor of Public Health (Dr.P.H.). Five institutions are accredited for master's degrees other than the M.P.H. with specialization in public health education.

Following are the schools accredited for 1954–1955, the types of degrees for which they are accredited, and the names of the deans or directors:

Institutions Accredited by the American Public Health Association for the Academic Year 1954–1955

Institution	Degrees for which Accredited		
		Master's	
	Dr.P.H.	M.P.H.	Other (P.H.Ed.)
California, University of School of Public Health Berkeley 4, Calif. C. E. Smith, M.D., Dean	X	X	—
Columbia University School of Public Health New York 32, N. Y. H. W. Brown, M.D., Director	X	X	X
Harvard University School of Public Health Boston 15, Mass. ————, Dean	X	X	X
Johns Hopkins University School of Hygiene and Public Health Baltimore 5, Md. E. L. Stebbins, M.D., Director	X	X	—
Michigan, University of School of Public Health Ann Arbor, Mich. H. F. Vaughan, Dr.P.H., Dean	X	X	—
Minnesota, University of School of Public Health Minneapolis 14, Minn. G. W. Anderson, M.D., Director	—	X	X
Montreal, University of School of Hygiene (Teaching in French) Montreal, Quebec, Canada Armand Frappier, M.D., Dean	—	X (D.P.H.)	—
North Carolina, University of School of Public Health Chapel Hill, N. C. E. G. McGavran, M.D., Dean	X	X	X
Pittsburgh, University of Graduate School of Public Health Pittsburgh 13, Pa. Thomas Parran, M.D., Dean	X	X	—
Toronto, University of School of Hygiene Toronto 5, Ontario, Canada R. D. Defries, M.D., Director		X (D.P.H.)	—
Tulane University Department of Tropical Medicine and Public Health New Orleans 13, La. M. E. Lapham, M.D., Dean	X	X	—
Yale University Department of Public Health New Haven, Conn. Ira V. Hiscock, Sc.D., Chairman	X	X	X

82nd ANNUAL MEETING

HOW TO MAKE HOTEL RESERVATIONS FOR THE BUFFALO ANNUAL MEETING

A HOUSING BUREAU will be operated by the Buffalo Convention Bureau for the 82nd Annual Meeting of the APHA in Buffalo, October 11–15. Since all requests for rooms will be handled in chronological order, you are urged to send in your reservation as quickly as possible on the form below.

Hotels and Rates

Hotel	Single	Double	Twin
Buffalo—Washington & Swan Sts.	$4.00– 6.50	$7.00– 9.50	$ 9.00–10.00
Graystone—Johnson Pk. & Delaware	2.50– 6.50	4.50– 9.50	6.50– 9.50
Lafayette—Washington & Clinton	5.25– 9.00	8.00–14.00	10.00–13.00
*Markeen—Main at Utica	3.50– 5.50	5.50– 8.50	8.00– 9.00
Midtown—430 Delaware Ave.	3.25– 5.00	5.50– 7.75	7.75– 8.00
Lenox—North Near Delaware	6.00– 8.00	8.50–12.00	9.00–14.00
*Richford—210 Delaware Ave.	3.00– 4.50	5.00– 8.00	6.00– 8.00
Sheraton—715 Delaware Ave.	5.85– 9.35	9.35–10.00	8.85–12.85
Statler—Delaware Ave. at Niagara Sq.	5.50–10.00	8.00–13.00	10.00–16.00
Stuyvesant—245 Elmwood Ave.	6.00–10.00	9.00–16.00	10.00–18.00
*Touraine—274 Delaware Ave.	5.00– 8.00	7.50– 9.00	8.50– 9.00
Westbrook—675 Delaware Ave.	5.00– 8.00	8.00– 9.00	10.00–12.50
Worth—200 Main St.	2.75– 4.50	4.75– 6.50	7.50
*Genessee—308 Pearl St.	2.50– 4.00	5.00– 6.50	7.00

* In addition to Private Baths these Hotels also have rooms with adjoining baths, or without baths.

Rates for Suites available on request.

HOTEL RESERVATION FORM

MAIL TO: Mrs. Evelyn McCarthy, Housing Bureau
155 Franklin Street, Buffalo, N. Y.

PLEASE MAKE RESERVATIONS NOTED BELOW: (Please Print or Type.)

First Choice ..... Hotel Arrival: ....., at ..... a.m. ..... p.m.

Second Choice ..... Hotel Departure: ....., at ..... a.m. ..... p.m.

Third Choice ..... Hotel

..... Single room @ $..... ..... Twin Bedroom @ $.....

..... Double Bedroom @ $.....

ARE YOU COMING BY CAR? YES..... NO.....

NAMES OF ALL OCCUPANTS: ADDRESSES:

.....

.....

.....

MAIL CONFIRMATION TO: Signed: .....

Address: .....

City Zone State

EMPLOYMENT SERVICE

The following pages present information for those seeking public health personnel and for those seeking positions in public health.

This is a service of the Association conducted without expense to the employer or employee.

POSITIONS AVAILABLE

Health Officer—for Lewis County, Wash. Well established full-time health department located west of the Cascade Range. $9,480–$11,328. Residency requirements waived, but applicants should possess the M.P.H. degree and three years of experience and be licensed or eligible for licensure in the State of Washington. J. A. Kahl, M.D., State Director of Health, 1412 Smith Tower, Seattle, Wash.

Chicago Civil Service Commission announces examination for the position of **Assistant Commissioner of Health,** Chicago Board of Health, $14,000 per year. New date: October 18, 1954. Write or call Civil Service Commission, 208 City Hall, Chicago, Ill.

Public Health Physician—for teaching and research. M.P.H., experience in public health field work and in teaching; research talents and youth are desiderata. Rodney R. Beard, M.D., Professor of Public Health and Preventive Medicine, Stanford Medical School, San Francisco 15, Calif.

District Health Officer—for area of 60,000. Full-time staff of nine. Preference given person with M.P.H. or public health experience, though not essential. May gain M.P.H. under Michigan auspices after indication of intention to remain in public health in Michigan. Reasonable leave, five-day working week, salary $10,000 per annum, plus seven cents per mile travel allowance. Paul J. Christenson, M.D., Director, Central Michigan District Health Dept., 610 South College, Mt. Pleasant, Mich.

Medical Health Officers—Several for local departments. M.P.H. degree or Board certification required. Salary range $8,400–$8,700, plus travel allowance. Henry A. Holle, M.D., State Health Officer, Austin, Tex.

District Health Officer — Baker-Union Counties in northeastern Oregon, gateway to the "Switzerland of America." M.D. plus M.P.H. required. $10,000 to start. Social Security and state retirement coverage; under merit system. A. T. Johnson, Merit System Supervisor, Oregon Merit System Council, P.O. Box 231, Portland 7, Ore.

Health Officer—Yamhill County. Population 33,000. Located 38 miles from Portland and within 50 miles of the coast. Must have M.D. plus M.P.H. and preferably some experience. $10,000 to start. Merit system, state retirement, and Federal Social Security. A. T. Johnson, Merit System Supervisor, Oregon Merit System Council, P.O. Box 231, Portland 7, Ore.

Chief Sanitation Supervisor—as head of sanitation division. Degree in public health or sanitary engineering is desirable. $6,600–$7,560. Total health department staff approximately 80; annual budget of $400,000. Write by October 1, 1954. Gavin Lawson, Director of Personnel, 403 City Hall, Tacoma, Wash.

Sanitarian—(California registration) $327–$397. County Civil Service, 236 Third St., San Bernardino, Calif.

Sanitarian—for broad program of community sanitation in health department in city of 77,000. $346–$389 plus hospital and surgical insurance and retirement benefits. Commissioner of Health, 730 Washington Ave., Racine, Wis.

Director of Public Health Laboratory—Public health laboratory work and clinical work of county hospital. One part-time assistant. County of 47,000 in Sierra foothills. $358–$436. Experienced person may start above minimum. Position requires California licenses as public health bacteriologist and clinical laboratory technician. Ruth M. Moldenhauer, M.D., Director, Placer County Health Dept., Auburn, Calif.

Health Educator—(Female) to help plan and organize health education programs with voluntary health agency in Washington State. M.P.H. required or equivalent practical experience in health education. Salary adjusted to qualifications. Supply full personal and work experience information to Victor Schoch, Executive Director, Washington State Heart Association, 5100 Arcade Bldg., Seattle, Wash.

Medical Social Work Consultant—$4,410–$5,250. Minimum requirements: bachelor's degree, plus two years of graduate study in a professional school of medical social work. Three years experience in medical social work; one year in supervisory capacity. Personnel Office, County Office Bldg., Rockville, Md.

Public Health Staff Nurse—wanted immediately for generalized program. $323, 15 working days vacation. Health Officer, Yolo County Health Dept., P.O. Box 532, Woodland, Calif.

Public Health Nurses — $275–$375. **Graduate Nurses**—$240–$330. New Mexico Dept. of Public Health, Merit System Supervisor, Box 939, Santa Fe, N. M.

Public Health Staff Nurses—For generalized program in county health department, north San Joaquin Valley, Calif. $318–$385 at fifth year. Hospital insurance in effect. Certificate in Public Health Nursing and California driver's license required. George F. O'Brien, M.D., County Health Officer, P.O. Box 1607, Modesto, Calif.

Supervising Nurse—Require public health nursing certificate and three years' experience. General program, four nurses on staff. $340. College town. Carl W. Hammer, M.D., City-County Health Dept., Bozeman, Mont.

Public Health Nurse Supervisor and Public Health Staff Nurses—for full-time local health departments. Supervisor requires B.S. and certificate in public health, plus three years of experience or the equivalent. $3,936–$4,692. Staff nurses require B.S. or certificate in public health nursing or the equivalent. $3,612–$4,296. J. A. Kahl, M.D., State Director of Health, 1412 Smith Tower, Seattle, Wash.

Public Health Staff Nurses—County of 60,000 near San Francisco; department staff includes 12 professional positions. Car required. $315–$383, starting salary depending on qualifications. Edward R. Pinckney, M.D., Director of Public Health, P.O. Box 749, 2281 Elm St., Napa, Calif.

Public Health Nurse II—in an organized district health unit. Minimum requirements: one year of approved public health study, some public health nursing experience, and eligibility for licensure as professional nurse in North Dakota. $3,600 or more depending on qualifications.

Public Health Nurses I—Positions available in city or county program. Minimum requirements: graduation from a recognized school of nursing and eligibility for licensure as professional nurse in North Dakota. $2,680–$3,600. Car necessary; seven and one-half cents per mile. Vera D. Knickerbocker, Director, Division of Public Health Nursing, State Dept. of Health, Bismarck, N. D.

Nurse—experienced in hospital nursing service or nursing education. Bachelor's degree required. Attractive salary, generous mileage, and expenses while traveling within the state. John D. Paulus Jr., Director, Bureau of Hospital Facilities, Division of Health, State Office Bldg., Jefferson City, Mo.

Public Health Nurse I—R.N. degree with some postgraduate work in public health and two year's experience in the public health field. $3,840–$4,080.

Public Health Nurse II—R.N.—Degree with postgraduate study equivalent to completion of an approved program of one or more years of public health nursing study and two years' experience in public health nursing field, some of which has been in a supervisory capacity. $4,170–$4,530. City of Saginaw, Mich. (population 100,000). Ten days sick leave. Monthly car allowance for use of own car. Personnel Advisory Board, City Hall, Saginaw, Mich.

Public Health Nurses—for generalized program in combination agency. $2,990–$3,588. Abbie I. Watson, Director, Community Nursing Service, 223 South Cherry St., Richmond, Va.

Supervising Public Health Nurse—$360 to start; increases to $438.

Public Health Nurse—$360 to start; increases to $397; desert position.

Public Health Nurse—$327 to start; increases to $397; valley area.

All applicants must be eligible for Public Health Nursing Certificate in California and have a car. Write County Civil Service Office, 236 Third St., San Bernardino, Calif.

Staff Public Health Nurse—For generalized public health nursing service, county health department, southwest Florida. Merit System, sick leave, retirement plan, and annual vacation. Must have own car; liberal mileage allowance. Salary depends on qualifications. M. E. Buchwald, M.D., Director, Lee County Health Dept., Masonic Bldg., Fort Myers, Fla.

Public Health Educators — $440–$545. Requires M.P.H. in health education from accredited graduate school of public health and two years of professional experience in public health education, or an equivalent combination of training and experience. Positions open are in districts with populations of 200,000 or more. Appointments are subject to subsequent competitive Civil Service examination. Send qualifications, background, and photo to George M. Uhl, M.D., Health Officer, 116 Temple St., Los Angeles 12, Calif.

Public Health Nurse—for staff position in generalized official program. Minimum requirements: one year of academic work in public health and two years' field experience under supervision. $290–$365. Merit system appointment. Must have car; seven and one-half cents mileage allowance. Palm Beach County Health Dept., Box 29, West Palm Beach, Fla.

Nursing Supervisor—for generalized program (seven field nurses). Position available

immediately in Anchorage, Alaska. $6,210. Minimum requirements: college degree, including or to which has been added an approved program of study in public health nursing; two years of generalized experience, plus one year of supervisory experience in public health agency. Dorothy Whitney, Chief, Section of Nursing, Alaska Department of Health, Alaska Office Bldg., Juneau, Alaska.

Psychiatric Social Worker or Mental Health Consultant—for pioneer community mental health program in a voluntary health agency demonstration program, financed by state funds. Close cooperation with official health department. $6,500–$7,000, master's degree from accredited school of social work with a minimum of seven years supervisory, administrative, and/or community organization experience, including three in psychiatric work. Responsibilities include planning program for prevention and early recognition of emotional health problems; inservice training of personnel; and education of public. Bernard M. Blum, M.D., Director, The Fife-Hamill Memorial Health Center, 7th and Delancey Sts., Philadelphia 6, Pa.

International Health Vacancies

Chief of Health and Sanitation Field Party — Foreign Operations Administration Mission, La Paz, Bolivia. Age 35–55 years. M.D. and M.P.H. degrees, plus at least 10 years' experience in responsible local and state public health administration. Duties: to plan and direct a comprehensive public health and sanitation program in cooperation with the Bolivian government.

Health and Sanitation Adviser—Foreign Operations Administration Mission, Dacca, Pakistan. Age 35–45 years. M.D. and M.P.H. degrees, plus at least five years' experience in responsible local or state public health administration. Duties: to advise the Government of East Bengal on health and sanitation matters.

Sanitary Engineer — Foreign Operations Administration Mission, Fortaleza, Brazil. Age 30–40 years. B.S. in civil or sanitary engineering, plus 10 years' experience in general sanitary engineering, including water supply development and design. Duties: to serve as consultant on technical and administrative aspects of the Sanitary Engineering Program being initiated in the State of Ceara, Brazil; to train staff personnel in sanitary engineering technics; and to select candidates for training grants.

Sanitary Engineer Education Consultant—Foreign Operations Administration Mission, Rio de Janeiro, Brazil. Age 40–50 years. M.S. in sanitary engineering and preferably Ph.D. or D.Sc., plus 15 years teaching experience at university level. Duties: to advise the Mission and officials of the Brazilian Ministry of Education on improvement of undergraduate and graduate education in sanitary engineering and to give lectures in Brazilian engineering schools, acquainting educators with new sanitary engineering educational technics.

Public Health Nurse (Regional) — Foreign Operations Administration Mission, Iran. Age 30–45 years. B.S. degree and at least one year of postgraduate study in public health nursing. Minimum of four years' experience in public health nursing; one year experience in supervision highly desirable. Duties: to be responsible for the planning and administration of a regional public health nursing program, including training Iranian nurses, midwives, and health aides and giving demonstrations to local groups.

Each has two-year minimum tour of duty. Salaries are augmented by adequate cost of living allowance. U. S. Public Health Service, Division of International Health, Washington 25, D. C.

POSITIONS WANTED

Bacteriologist-Serologist — M.S. in bacteriology, two years' public health laboratory experience. Research experience also in biochemistry. Desires laboratory or research position with progressive organization. **Box L-41,** Employment Service, APHA.

Physician—M.P.H., age 39. Desires position as assistant director in a chronic disease program. Interested in coordinating medical care services. Training and experience in internal medicine, pediatrics, epidemiology and communicable diseases, and chronic diseases and rehabilitation in teaching institutions and state-wide programs. Diplomate of the National Boards of Medical Examiners. Locate anywhere. **Box PH-48,** Employment Service, APHA.

Statistician—30 years old, two and one-half years' experience, desires position in public health. Excellent background in advanced analytical technics: analysis of variance and correlation analysis. Experience in public health descriptive statistics. Studying toward M.A. in applied statistics. Limited to New York City and environs. **Box ST-10,** Employment Service, APHA.

Statistician—M.A., 18 years' public health experience, consultant, analyst, qualified to organize and direct statistical program. Desires research position. **Box ST-11,** Employment Service, APHA.

Public Health Educator — B.S. and M.S.P.H.E., Columbia University. Three and one-half years' experience in health education, community organization, social recreation, and teaching. Seymour Reiff, 83-57 118 St., Kew Gardens 15, N. Y.

Commercial Advertisements

All communications on the following commercial advertisements should be sent to Burneice Larson, Medical Bureau, Palmolive Building, Chicago 11, Ill.

OPPORTUNITIES AVAILABLE

(a) County health officer; staff of 53; California. (b) Public health physician to organize and direct new county health department; resort area; East. (c) Public health physician, Diplomate or eligible, to serve as assistant director, important health organization; around $12,000; East. (d) Public health physicians, nurses, health educators, and sanitarians; foreign assignments; knowledge of Spanish, French, or Portugese required. (e) Public health nursing director; private agency established 1908; modern offices; New England. (f) School nurse; high school, 800 students; teacher salary schedule; near Chicago. (g) Cancer consultant nurse; state health department; newly created appointment; South. (h) School nursing consultant; state health department; West. (i) Assistant professor, health education; state university, East.

Burneice Larson, Medical Bureau, Palmolive Building, Chicago, Ill.

OPPORTUNITIES WANTED

(a) Public health physician; M.P.H.; Diplomate; nine years, director, city health department. (b) Public health nursing administrator; M.P.H.; five years, consultant, state health department, four years, health coordinator, liberal arts college. (c) Health educator; M.P.H.; six years, health educator, state health department; recommended as competent visual information specialist. (d) Sanitary engineer; B.S.; six years, sanitary engineer state department of health. (e) Statistician; M.S.P.H. (Public Health Statistics) six years, statistician, state health department.

Burneice Larson, Medical Bureau, Palmolive Building, Chicago, Ill.

Laboratory Refresher Courses

Two-week refresher courses on the laboratory technics of Serology of Syphilis, will be given six times at the Venereal Disease Research of the Public Health Laboratory in Chamblee, Ga., beginning in September. The course is first given September 13–24, 1954, and thereafter approximately monthly until April 11–22, 1955. A course on the Management and Control of Syphilis Serology by the Regional Laboratory will be held May 2–13, 1955.

The serology course is designed to acquaint the student with the most widely used American methods for the serodiagnosis of syphilis and the latest development of technic and is arranged primarily to meet the needs of senior operating personnel from state laboratories, health departments, federal government installations, and duly accredited representatives from other countries desiring refresher rather than fundamental training. A third week of intensive training in specific test technics is available immediately after each scheduled course for students desiring it.

The course on Management and Control of Syphilis Serology by the Regional Laboratory is arranged for assistant laboratory directors and senior laboratory staff members. It includes review of interlaboratory training programs, regional laboratory evaluation studies, laboratory inspection procedures, demonstration of antigen check-testing, and control serum preparation.

Reservations will be made as soon as applications are received and lists will be closed one month before the starting date of each course. Correspondence should be addressed to: Director, Venereal Disease Research Laboratory, Division of Special Health Services, Public Health Service, P.O. Box 185, Chamblee, Ga.

News from the Field

WHO News

PASB Executive Committee Meets

At the 22nd meeting in April of the Pan American Sanitary Organization Executive Committee, a budget of $2,100,000 for the PASB was approved. All but $100,000 of this is met by assessments against the 21 American republics that are members of the bureau. The director, Fred L. Soper, M.D., reported 63 health projects in the Americas receiving the technical assistance of the bureau.

The committee made plans for the 14th quadrennial Pan American Sanitary Conference to be held in Santiago, October 7–22, 1954. The three subjects chosen for technical discussion are:

1. Methods of Improving the Reliability of Raw Statistical Data Required for Health Programs
2. Control of Infant Diarrheas in the Light of Recent Scientific Progress
3. Application of Health-Education Methods in Rural Areas in Latin America.

The Government of El Salvador proposed a Central American Institute of Biological Products. The PASB director was asked to study the advantages and need for such an institute which would be established jointly by the six Central American republics with PASB assistance.

Among other recommendations made by the Executive Committee were the need for studying the members' needs for vaccines and making plans for the production, centralization, and distribution of vaccine. It was also recommended that the bureau expand its collaboration with medical and public health services in the various member countries through the education and training of health technicians.

Frederick J. Brady, M.D., international public health representative of the Public Health Service and representative of the United States, was vice-chairman of the conference, and Dr. Gerardo Segura of Argentina, its chairman. Among the United States advisers was Charles L. Williams, Jr., M.D., of the Institute of Inter-American Affairs, FOA.

European Health Education Progress

The Regional Office for Europe has summarized in a news release some of the significant activities going on in health education among the member states. Among the most important is the planning for the Second European Conference on Health Education tentatively scheduled for 1956. A committee meeting in Lyon, France, in June, 1954, agreed on a purpose "to explore the needs, activities, and resources for training health and education personnel in health education of the public." The conference is designed to include participants from both the health and education fields. It will consider for the various types of public health workers health education methods and training needs—inservice, basic, and specialist training. It is hoped that in the period before the conference, studies of current health activities in different countries can be made for reporting to the conference.

Belgium has a National Committee on Health Education, the purpose of which is to encourage closer working relationships with agencies in order to improve methods, coordinate efforts, and extend the field of health education.

Finland held a National Conference on Health Education in March, 1954, at which similar provincial and local

conferences were planned. Germany has a National Committee for Health Education of the Public which is planning a health education conference to be held sometime in 1955. In Italy, where a health education project is being carried on with WHO cooperation in Perugia, a two-day conference was held in June at which time an experimental center for health education of the public was formally opened. The center's staff consists of the provincial health officer, a public health nurse provided by the national ministry of health, an educator by the ministry of education, and an assistant health officer. Health education activities are being developed around maternal and child health, tuberculosis, and sanitation activities.

In Great Britain, the Central Council on Health Education in August held a two-week Summer School on Program and Practice in Health Education for medical officers and nurses in public health, hospitals, and industry, as well as teachers, welfare workers, and others.

In Spain a course in hygiene and sanitation given by the local health officers has been initiated in 60 technical schools. A guide for the use of teachers has been prepared by the health propaganda section of the National Department of Health.

Yugoslavia reports a health education project in connection with typhoid vaccination in Osijek, Croatia. In a village district of Serbia an illustrated booklet analyzing the local hygiene problems has been prepared for health workers in the district.

Not Drunk but Sick

"He can still be cured" is the theme of WHO's July-August, 1954, Newsletter. Devoted wholly to the subject of alcoholic addiction, this issue is a brief resumé of present knowledge and present resources for the prevention of addiction and its cure when present. Four phases of the addiction process are described, the beginning of social drinking, the warning phase, the crucial phase, and finally the chronic phase—and always there is the note that "alcoholics are made, not born."

The present resources are the aid of ex-alcoholics, represented chiefly by Alcoholics Anonymous; certain drugs as a part of psychotherapy; and outpatient services for early stages. The Alcoholism Subcommittee of WHO, in the report of its first session, expresses the belief that "if adequate networks of dispensary services at general hospitals are developed for the ambulatory treatment of alcoholism at its earliest stages, the need for special residential institutions will progressively diminish."

Included is a fairly full discussion of AA—how it began and how it works; also found is "Drink and Driving—the Unsolved Problem." About this problem the Expert Committee has but one current conclusion, that at present no uniform international solution can be found but must be dealt with on a national level.

East Coast Migrant Conference

What is said to be the first meeting of representatives of public and private agencies in the East Coast states to work out plans for getting, health, education, and welfare services to migrant workers and their families was held in Washington in May. The conference was sponsored by the Children's Bureau, Office of Education, and the Public Health Service with the cooperation of the Bureau of Public Assistance and the participation of the Departments of Agriculture and Labor and the Home Finance Agency. Ten East Coast states from Georgia northward to New York participated.

As a background for the recommendations of the conference the philosophy was laid down that the migrant worker

is a citizen with all the privileges and responsibilities of citizenship. There must be no paternalism in the approach to his problems and services must be planned with him with every opportunity to develop his own potentialities for democratic living.

The conference proposed that local, state, interstate, and federal committees be organized on a continuing basis to provide leadership, to study the problem and needs, exchange information, and plan for coordinated action. All local, state, and federal services such as old-age assistance, unemployment and workmen's compensation should be available to migrant workers as for other citizens without regard to residence and should be financed by state and local funds in addition to federal. Minimum housing standards for transient labor should be developed, day care centers for young children set up in large migrant camps, schooling adapted to migrant children should be provided, adult education programs developed, and uniform health and school records put into practice. The development of health record was referred to the Migrant Labor Committee of the Association of State and Territorial Health Officers. Maryland, New Jersey, and New York agreed to experiment with a school record form that was developed at the conference.

The Joint Committee of the conference has circulated a seven-page preliminary report outlining the recommendations under 12 main groups. A total report of the conference will be available later.

Local Indigent Medical Care Plan

A plan to provide medical care for those who believe they cannot afford to go to a physician is in operation cooperatively by the Kanawha County (W.Va.) Medical Society and the Charleston-Kanawha County Health Department. Under the plan persons living in the area who cannot pay for medical service may go either to the Health Department or to the office of any one of the 287 members of the Medical Society where they fill out a short-form application for free medical care. The local health department is responsible for investigation; if the applicant is ineligible for care from an existing clinic or agency, he is assigned, according to a report in the Journal of the American Medical Association, to one of the county medical society members for medical care. According to the J.A.M.A. report, the society guarantees the services of a physician in his office or at a clinic or hospital to any patient unable to pay.

Asian Public Health Society

The Asian Public Health Society was recently organized in Boston by 28 physicians from 12 different nations of Asia studying at the Harvard School of Public Health, as a forum for discussion of common problems and to promote interest in preventive medicine and public health in medical and allied schools throughout Asia. Objectives of the newly formed society include promotion of participation by individuals in public health in Asia, collection of data, exchange of information, stimulation of interest in preventive medicine and public health among students in medical and allied institutions, and cooperation with allied organizations. Membership is open to citizens of any nation in the world "interested in public health in Asia."

A quarterly journal, in English, is a definite goal. Its editor-in-chief, who is also one of the two joint secretaries, will be N. Purshottam, M.B.B.S., M.P.H., junior professor of preventive medicine in the Medical College of Trivandrum, India. He has been at the Harvard School of Public Health for the past three years working chiefly under John

E. Gordon, M.D., professor of preventive medicine and epidemiology. The faculty of the school helped in the early organization of the new society as one more span in the "bridge of international health" being built by the Harvard School. (A.J.P.H., 44, 3:415 (Mar.), 1954).

Officers in addition to Dr. Purshottam are:

President—Phan Q. Dan, M.D., M.P.H., Trivandrum Medical College
Vice-President—Jacunto Dizon, M.D., M.P.H., Bureau of Health, Manila, Philippines.
Executive Secretary—J. Khaddouri, M.D., Ministry of Social Affairs, Iraq
Joint Secretary—Arturo C. Reyes, M.D., Dr. P.H., University of Philippines
Treasurer—S. V. Raja Rao, M.B.B.S., M.P.H., India
Joint Treasurer in the United States—C. Pan, M.D., M.P.H., Harvard School of Public Health

First Dental Care Plan

What is reported to be the first voluntary community-wide prepayment dental insurance plan in the United States has been established in New York City. Group Dental Insurance Plan, Inc., has been created with the endorsement and encouragement of the First District (New York City) Dental Society. All dentists in Metropolitan New York are invited to join. For the present only those are eligible as subscribers who are members of employed groups of at least 40, of whom at least 75 per cent enroll. Immediate dependents are covered. The plan is designed to meet all costs of dental care for families with incomes of less than $5,000 and for part care of those with higher incomes. Each patient receives treatment in the private offices of a dentist of his own choice from among those who are participants in the plan.

Chairman of the board of the plan is Winslow Carlton, who is also chairman of the board of Group Health Insurance. Bissell B. Palmer, D.D.S., is president of the new plan. 120 Wall St., New York, N. Y.

Courageous New Mexican Leadership

What has been happening in public health in New Mexico is related in the July, 1954, issue of Western Public Health, the quarterly of the Western Branch, American Public Health Association.

According to the report, the governor of the state, prodded by some personally ambitious persons, and in the name of economy and efficiency, announced an imminent consolidation of the Welfare and Health Departments, making the State Health Department a division of the Welfare Department. This happened shortly after Gerald Clark, M.D., became health director and without consulting him, the state legislature, or the people.

The report indicates Dr. Clark carried on a remarkably astute campaign "to bring public opinion into focus to resist this ill-advised change . . . not only did he save his department from practical destruction, but he succeeded in getting wide publicity for the department and an increased public understanding, interest, and support"—this with a minimum of "ill-feeling." The attorney general took the governor "off the hook" by ruling that he had no authority to make the consolidation.

Concludes the report, "Dr. Clark deserves an accolade for courage and skillful leadership," and hopes the "whole story will be written as an instructive document in public health policy."

Lederle Medical School Awards

The Lederle Laboratories Division, American Cyanimid Company, has created awards designed to help assure that more promising medical men can afford to remain in teaching and research work. Reported to be the first of their

kind in this field, the awards augment salaries and help schools fill teaching positions. All grants are made through a Medical Faculty Awards Committee. They are made for a term not exceeding three years and no single grant may be in excess of $10,000 per year.

Fourteen grants totaling more than a quarter of a million dollars for 1954 were recently announced. They went to recipients in universities and medical schools in nine states and the District of Columbia—all but four were for a three-year period.

Pioneer Health Education Group

The nation's oldest organized health education association, so it is said, is the New England Health Education Association. For its 1954 meeting in Swampscott, Mass., in May, a brief history was published covering its 29-year life. The history was written by John E. Farrell, Sc.D., executive secretary of the Rhode Island Medical Society, and dedicated to Clair E. Turner, Dr.P.H., who stimulated the birth of the association.

Officers elected at the May meeting are:

President—Marie Fortunati, Massachusetts
President-Elect—John E. Farrell, Rhode Island
Vice-President—Mary Pearl, Burlington
Recording Secretary—George Van Bibber, Connecticut
Corresponding Secretary—Wyntha Tompkins, Massachusetts
Treasurer—Ruth Clough, Maine

Blakeslee Heart Awards

The Howard W. Blakeslee Award of the American Heart Association for outstanding scientific reporting in the field of heart and blood vessel diseases has been divided into several awards to cover specific categories of newspapers, magazines, radio and television, instead of the single award established last year. H. M. Marvin, M.D., chairman of the Awards Committee, explained that the number of awards was increased because of the general excellence of the entries in the major areas of mass communication. The awards will provide a minimum of $500 for each category to be selected by the judges rather than the original single honorarium of $1,000.

Presentation of the 1954 awards will be made at the combined meeting of the Second World Congress of Cardiology and the Twenty-Seventh Scientific Sessions of the American Heart Association to be held September 12–17 in Washington, D. C. Those receiving awards are:

Cathy Covert, medical writer, and Arthur Cornelius, chief photographer of the Syracuse Herald-Journal, for a series on the heart diseases, in the Syracuse Herald-Journal, December, 1953.

Clive Howard for "Can Heart Disease Wreck Your Marriage?", in the February, 1953, issue of Woman's Home Companion.

"American Inventory," for "The Mechanical Heart," a documentary television program, telecast on NBC-TV, produced by William Hodapp, Robert Wald, Laurence Schwab, Jr., and the staff of WWJ-TV, Detroit, with the cooperation of the General Motors Corporation and the Michigan Heart Association.

William A. Brams, M.D., of Chicago, for "Managing Your Coronary," J. B. Lippincott Company, Philadelphia.

The Blakeslee Award was established in 1953 in memory of Howard W. Blakeslee, the late science editor of the Associated Press and founder of the National Association of Science Writers, who died of heart disease. It is awarded annually to individuals whose creative efforts in any medium of mass communication are judged to have contributed most to public understanding of heart and circulatory diseases.

Psychiatric Aide Awards to 95

The 1953 Psychiatric Aide Achievement Awards of the National Associa-

tion for Mental Health have been presented to 95 psychiatric aides employed by mental hospitals in 33 states and the District of Columbia. Candidates were nominated by their patients, co-workers, and neighbors as "most representative of the collective advancement rendered by the aide group to the better ward care and well-being of their patients." The winning candidates were selected from among 31,536 psychiatric aides employed in the care of more than 215,000 mental patients.

The purposes of the awards, presented annually since 1947, are to focus public attention on the important role of psychiatric aides in the care of the mentally ill, to help gain adequate recognition for those engaged in the profession, and to encourage the promotion of higher standards of on-the-ward care.

National Hay Fever Fund Initiated

A National Hay Fever Fund was launched in New York City in April, 1954, by the Hay Fever Prevention Society. Immediately, a program of organizing local hay fever committees was begun. Such local committees will have permanent status and will initiate and organize local ragweed control programs, in addition to raising money for the fund.

The society has prepared suggestions for organizing local committees. Included among the recommended subcommittees are one each on Ragweed Inspection and Ragweed Eradication. Also available from the society are four brochures directed to the general public, farmers, industries, and municipalities indicating the extent of hay fever, its health hazards, and the economic loss it causes. The four brochures are, respectively, "Do You Know?", "Your Farm May Have It!", "Industry Is Allergic," and "It's in the Air." Hay Fever Prevention Society, 270 Park Avenue, New York 17, N. Y.

Obstacles to Communication

What are the obstacles to communication among groups concerned with adult education (including health education) in your community? What is being done to improve communication among local groups? How can we make the communication from the national to the local unit more meaningful? These and other questions were discussed recently by leaders of 30 national organizations at three, one-day institutes held in New York, Chicago, and Washington D. C., under the sponsorship of the Council of National Organizations of the Adult Education Association.

The council is now turning to its member organizations for cases or examples of successful experiences in communication among local groups and between national and local units. If you have a story to tell, please send it before October 1, to Professor Ruth E. Grout, School of Public Health, University of Minnesota, Minneapolis, Minn., who is the American Public Health Association representative on the Council of National Organizations.

A New TV Medical Project

The American College of Physicians has announced a nation-wide TV closed circuit telecast in connection with its postgraduate program to be given Thursday evening, September 23, 6 to 7 P.M., Eastern Daylight Saving Time, over the Columbia Broadcasting System. This is said to be the first nation-wide closed circuit hookup for postgraduate medical education. It is made possible through the cooperation and support of Wyeth, Inc., of Philadelphia.

A panel of distinguished physicians will conduct a symposium on the management of hypertension. This closed TV circuit is one by which reception is controlled and is not open

to the general TV public. This telecast cannot be picked up in the home, but the invited audience must go to the TV receiving station. Twenty-three such receiving stations will be used, located in Boston, New York, Philadelphia, Washington, Pittsburgh, Charlotte, Atlanta, Cincinnati, Detroit, Chicago, St. Louis, Milwaukee, Minneapolis, Memphis, Dallas, Houston, New Orleans, Denver, Salt Lake City, Los Angeles, San Francisco, Baltimore, and Cleveland. Persons interested should make contacts with the CBS outlet in these cities.

Correction

The following is a corrected formula for the one given on page 1112 in "Use of Tergitol-7 Triphenyl Tetrazolium Chloride Agar as the Coliform Confirmatory Medium in Routine Sanitary Water Analysis," by Walter L. Kulp, et al. The article was published in the September, 1953, issue of the Journal.

The ingredients in T-7 agar, in grams per liter, are as follows: Bacto proteose peptone No. 3, 5.0 gm.; yeast extract, 3.0 gm.; lactose, 10.0 gm.; agar, 15.0 gm.; Tergitol-7, 0.1 gm.; bromthymol blue, 0.25 gm.; 2, 3, 5-triphenyl tetrazolium chloride, 0.04 gm.; final pH 6.8–7.0

PERSONALS

EARLE K. BORMAN, M.S.,† assistant director, Bureau of Laboratories, Connecticut State Health Department, Hartford, since 1932, has been named chief of the department's Bureau of Laboratories, succeeding FRIEND LEE MICKLE, M.D.,* retired.

PETER A. BREYSSE, former graduate assistant sanitary engineer, Washington State College, is now a public health engineer, Montana State Board of Health, Helena.

WILBUR V. CHARTER, Dr.P.H.,* who has been deputy director of medical statistics, Navy Department, Washington, D. C., has been promoted to become the first civilian to head the Medical Statistics Division in the Navy.

DAVID A. COOPER, M.D.,† past president, American Trudeau Society, has been elected president, Philadelphia Tuberculosis and Health Association.

SIR ANDREW DAVIDSON,* formerly chief medical officer of the Department of Health for Scotland, received an honorary degree of Doctor of Laws from the University of Glasgow during the meeting of the British Medical Association in Glasgow in July.

EMERSON DAY, M.D.,† director, Strang Cancer Prevention Clinic, Memorial Center for Cancer and Allied Diseases, has been appointed chief of the new Division of Preventive Medicine, Sloan-Kettering Institute, the research unit of the center, and professor of preventive medicine, Sloan-Kettering Division of Cornell University Medical College, New York City.

H. TRENDLEY DEAN, D.D.S.,* secretary, Council on Dental Research, American Dental Association, Chicago, Ill., has been appointed to represent the association in the Division of Medical Sciences, National Research Council.

JANET DOE, first woman librarian, the New York Academy of Medicine and past president of the association, has been awarded the 1954 and fourth Marcia C. Noyes Award of the Medical Library Association "for outstanding achievement in medical librarianship."

NEWMAN A. DYER, M.D., formerly in private practice in West Virginia, is now health commissioner of a newly organized tri-county health department, made up of Fayette, Pike, and Ross Counties, Ohio, with headquarters in Chillicothe. Dr. Dyer is the son of NEWMAN H. DYER, M.D.,† health officer of West Virginia.

MARY C. EGAN,† acting associate nutritionist, Bureau of Nutrition, New York State Health Department, has been awarded the Marguerite J. Fisher Fellowship for graduate study at Harvard University School of Public Health, Boston, Mass., by the State Federation of Business and Professional Women's Clubs.

RUTH L. EVANS, field representative, National Association for Mental Health, has resigned to become field consultant, Committee on Children and Public Welfare, New York State Charities Aid Association.

SOPHIE FEVOLD, R.N.,† director, Public Health Nursing Association of Des Moines, Iowa, has been appointed executive director of the Visiting Nurses Association and Bureau of Nursing, Dayton (Ohio) Division of Health.

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* Fellow.
† Member.

JEFFRY H. FRYER, M.D., a native of England, has joined the staff of the Cornell University School of Nutrition, Ithaca, N. Y., to conduct medical research concerned with food and nutrition.

JOSEPH L. GAYTON, M.D., D.P.H.,* at present health officer, Victoria, British Columbia, Canada, has been appointed assistant senior medical officer, metropolitan area of Vancouver.

LUIS GIANNATTASIO, civil engineer of Montevideo, Uruguay, and president of the Pan American Union of Engineering Societies, has been elected to honorary membership in the American Society of Mechanical Engineers.

JUDITH GILBERT, formerly on the staff of the George Junior Republic, is now public relations director, Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine.

DUDLEY A. HILL, M.D.,† former district physician, Toronto Public Health Department, Canada, is now health officer, Lockport District, New York State Health Department.

GEORGE HOGEBOOM, M.D., head, Cell Chemistry Unit of the section since 1950, has been promoted to head the Cellular Biology Section of the Laboratory of Biology, National Cancer Institute, Public Health Service, Bethesda, Md.

KENNETH E. JACOBS,† former field counselor, Ohio Tuberculosis and Health Association, is now program coordinator, Marion County Tuberculosis Association, Indianapolis, Ind.

EDWIN A. JOHNS, former comptroller, Grace-New Haven Community Hospital, Conn., is now assistant director and comptroller, Beth Israel Hospital, Boston, Mass.

BERTHA M. JOSEPH, M.D., has succeeded RICHARD A. NIPLE, M.D., as health commissioner, Belmont County, Ohio.

JULIUS KATZ, M.D.,† director, Bureau of Tuberculosis Control in State Institutions, Division of Tuberculosis Control, New York State Health Department, Albany, has been assigned jointly by the Departments of Health and Mental Hygiene as director of Mental Hygiene Tuberculosis Services.

DOROTHY H. KISHIYAMA, formerly with the Seattle-King County (Wash.) Department of Public Health, is now on the bacteriology staff, Colorado State Health Department Laboratory, Denver.

BEN LA BELLE has returned to the Allegan County (Mich.) Health Department as chief sanitarian after receiving a master's degree in public health from the University of Michigan.

MARCIA LANE,† former executive secretary, New Britain (Conn.) Tuberculosis Association, is now coordinator of education programs, Beth Israel Hospital, Boston, Mass.

ANTHONY J. LANZA, M.D.,* professor and chairman, Department of Industrial Medicine and Director, Institute of Industrial Medicine, New York University-Bellevue Medical Center, New York City, has been appointed professor emeritus of the Post-Graduate Medical School, and will continue to act as a consultant in industrial medicine.

GERALD D. LA VECK, M.D., epidemic intelligence officer, Epidemiology Branch, Communicable Disease Center Field Station in Greeley, has been placed on temporary part-time loan with the Colorado State Department of Public Health as chief of the Epidemiology Section replacing DONALD G. ROBERTS, M.D., resigned to enter private practice in Grant, Neb.

FRED LAWRENCE, M.D., former psychiatrist for the Student Health Service, University of Missouri, has been appointed director of the newly-formed Indiana State Commission on Alcoholism.

FRANK R. LIGUORI,† sanitary engineer, Cattaraugus County Health Department, is now director of environmental sanitation, Tompkins and Cortland County Health Departments, N. Y.

SIDNEY LISWOOD,* assistant director Beth Israel Hospital, Boston, Mass., has been promoted to associate administrator.

WALTER J. MARCLEY, M.D.,† consultant on tuberculosis, Minnesota Department of Health, Minneapolis, has been given a plaque in recognition of his being one of the founders of the National Tuberculosis Association in 1904.

ELIAS J. MARSH, M.D.,† director, Preventive Mental Hygiene Program, Connecticut State Department of Health, has returned full time to the department after serving as acting commissioner of the State Department of Mental Health pending the arrival of JOHN J. BLASKO, M.D., first commissioner of the new department.

CHARLES D. MAY, M.D., professor of pediatrics, University of Iowa School of Medicine Iowa City, has been appointed editor of Pediatrics, the journal of the American Academy of Pediatrics.

CHARLES R. MCINTYRE, JR., former engineer in the Dallas County Health Department, is now staff sanitation consultant, the Orkin Institute of Industrial Sanitation, Dallas, Tex.

GEORGE W. MILLER, M.D.,† formerly with the Division of Epidemiology, Department of Health, Ontario, Canada, is now national

* Fellow.
† Member.

director, Blood Transfusion Service, Canadian Red Cross Society, with headquarters in Toronto.

MADELEINE E. MORCY, M.D.,† former pediatric consultant, Personal Health Division, North Carolina State Department of Health, is now regional medical director, Chicago (Ill.) Area, Children's Bureau. She succeeds DONALD HARTING, M.D.,† who has been transferred to Washington, D. C., as chief, State and Local Health Services Branch, Bureau of State Services, Public Health Service.

SARAH I. MORRIS, M.D.,† director, Division of Diagnostic and Clinic Services of the Pennsylvania State Health Department's Bureau of Tuberculosis Control, has received the first Commonwealth Committee Citation from the Pennsylvania Division of the National Board, Woman's Medical College of Pennsylvania.

HARRY MOST, M.D.,† who has been acting chairman, Department of Preventive Medicine, New York University-Bellevue Medical Center, New York City, since July, 1953, has been appointed Hermann M. Biggs professor of preventive medicine and chairman of the department.

A. PACKCHANIAN, Ph.D.,† professor of bacteriology and parasitology and director of the Laboratory of Microbiology, University of Texas School of Medicine, Galveston, is in Africa, chiefly in the Belgian Congo, Nigeria, and Uganda, studying the chemotherapy of African sleeping sickness. He will also stop briefly in Egypt to study amoebiasis, in Arabia to collect data on yaws, and in Iran and Lebanon to make a brief survey of leishmaniasis.

SIDNEY PAETRO,† after receiving the master of public health degree from Tulane University, has returned to his position as sanitarian, Broward County Health Department, Fort Lauderdale, Fla.

G. S. T. PEEPLES, M.D.,* former director of Local Health Services, has been named health commissioner of South Carolina to succeed the late BEN F. WYMAN,* M.D.

MARY T. A. POLING, M.D., health officer, Seneca County, Ohio, has resigned.

ELLEN C. POTTER, M.D.,* member of the New Jersey Governor's Commission on Chronic Illness, recently received the Alumnae Achievement Award of the Alumnae Association, Woman's Medical College, Pa.

ANTHONY J. J. ROURKE, M.D.,* executive director, Hospital Council of Greater New York, has resigned to become a consultant in hospital and medical school administration and construction. He is located at 175 Barnard Road, New Rochelle, N. Y.

MARION W. SHEAHAN,* associate director, National League for Nursing and director of its Division of Nursing Services, has received the 1954 Hermann M. Biggs Memorial Award of the New York State Public Health Association for "outstanding and unusual services for the advancement of public health in New York State."

DONALD R. SICKLER, M.D., has succeeded VERNON M. PADGETT, M.D., as head of the Division of Tuberculosis, District of Columbia Health Department.

JAMES A. SOLAN, former assistant to the executive director, Boy's Club of America, is now director of development, Roscoe B. Jackson Memorial Laboratory and the Jackson Laboratory Association, Bar Harbor, Me.

ALEX J. STEIGMAN, M.D.,* professor of child health, University of Louisville School of Medicine, Louisville, Ky., has been appointed chairman of the Department of Pediatrics and serves as chief of pediatrics, Louisville General Hospital, and physician-in-chief to the Children's Hospital.

WILLIAM A. TOWNSEND,† former public health physician, Tuberculosis and Sanatoria Division, is now assistant director, Division of Communicable Diseases, Massachusetts Department of Public Health.

F. P. WILCOX, D.V.M.,† former chief, Division of Dairies and Dairy Products, Los Angeles County Health Department, is now county livestock inspector, Los Angeles County, Calif.

DEATHS

COL. VIRGIL H. CORNELL, MC., USA (Ret.),† pathologist, Washington Sanitarium and Hospital, Takoma Park, Washington, D. C., on June 3 (Laboratory Section).

SAMUEL J. CRUMBINE, M.D.,* charter fellow of the American Public Health Association, on July 12 at the age of 91 (Maternal and Child Health Section). Dr. Crumbine, known as the "frontier doctor" was executive officer of the Kansas State Board of Health from 1904 to 1923. During this time his efforts resulted in the outlawing of the common drinking cup and the roller towel in trains, hotels, and schools. He was also a pioneer in the field of obtaining increased milk inspection and for the inoculation of children against diphtheria. Dr. Crumbine was general executive of the American Child Health Association between 1923 and

* Fellow.
† Member.

his retirement in 1936. When he was 86 years old, he wrote his autobiography, "Frontier Doctor." In 1951 he received a forty-year membership certificate of the American Public Health Association.

J. RUSSELL ESTY, Ph.D.,† director, Western Branch Research Laboratory, National Canners Association (Food and Nutrition Section).

DONALD T. FRASER, M.B., D.P.H.,* professor of hygiene and preventive medicine and associate director of the Connaught Medical Research Laboratories, University of Toronto, Toronto, Canada on July 20 (Laboratory Section).

THEODORE R. RHEA, C.P.H.,† executive director, Hawaii Cancer Society, Inc., Honolulu, on July 10 (Public Health Education Section).

CECIL A. Z. SHARP, M.D.,* commissioner of health, St. Louis County Health Dept., Clayton, Mo., on July 13 (Medical Care Section).

JAMES S. SIMMONS, M.D., Dr.P.H.,* dean, Harvard School of Public Health, suddenly on July 31 (Unaffiliated). Dr. Simmons died in a Hartford, Conn., motel while he and Mrs. Simmons were returning from a vacation in North Carolina.

Dr. Simmons who received his Doctorate in Public Health from the Harvard School of Public Health in 1939 became its dean in 1946, upon his retirement from the Army after 30 years of service. He was chief of preventive medicine, Office of the Surgeon General, during World War II and in 1945 was decorated with the Distinguished Service Medal. In 1943, he was awarded the Sedgwick Memorial Medal for Distinguished Service in Public Health of the American Public Health Association of which he was a Fellow.

LAWRENCE SMITH, M.D., Watertown (N.Y.) city health officer on July 21.

ARTHUR W. TOWNE (retired) of Syracuse, N. Y., on July 19.

CONFERENCES AND DATES

American Public Health Association. Headquarters: Memorial Auditorium, Buffalo, N. Y., October 11–15, and Related Organizations, including:

American School Health Association
Biometrics Society
Business Management in Public Health, Association of
Cleveland Health Museum, National Advisory Council of
Commissioned Officers Association of the U. S. Public Health Service
Consultants in Special Studies, Committee on
Health Authorities of North America, Conference of State and Provincial
Health Council Work, Conference for
Health Officers, Association of State and Territorial
Hospital Consultants, American Association of
Hospital Planning Agencies, Association of
International Health, Division of, Department of Health, Education and Welfare
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Medical Care Through Group Practice and Prepayment, Conference on Organization of Federation for the
Medical Health Officers, International Society of
Military Government-Civil Affairs Public Health Society
Municipal Public Health Engineers, Conference of
National Sanitation Foundation
Professors of Preventive Medicine, Conference of
Public Health Cancer Association
Public Health Education, Conference of Directors of
Public Health Educators, Inc., Society of
Public Health Laboratory Directors, Conference of State and Provincial
Public Health Laboratory Directors, Association of State and Territorial
Public Health Physicians, American Association of
Public Health Statisticians, New York State
Public Health Training, Conference of Directors of
Public Health Veterinarians, Conference of
Reserve Officers Association of the U. S. Public Health Service
Sanitary Engineers, U. S. Section, Inter-American Association of
Schools of Public Health, Association of
Union-Management Medical Program Administrators
World Health Organization, National Citizens Committee for

State and Regional Public Health Meetings:

Arkansas Public Health Association. Marion Hotel, Little Rock, Ark. October 28–29.

* Fellow.
† Member.

Florida Public Health Association. Roney Plaza Hotel, Miami Beach, Fla. October 21–23.

North Carolina Public Health Association. Sir Walter Hotel, Raleigh, N. C. September 23–25.

Oklahoma Public Health Association. A. & M. College, Stillwater, Okla. November 8–10.

Meetings of Other Organizations Coming in September, October, and November:

American Academy of Pediatrics. Chicago, Ill. October 3–7.

American Cancer Society. Hotel Roosevelt, New York, N. Y. October 17–24.

American Chemical Society. New York, N. Y., September 12–17.

American Council on Education. Chicago, Ill. October 14–15.

American Dental Association. Miami, Fla. November 8–11.

American Dietetic Association. Philadelphia, Pa. October 26–29.

American Heart Association and Second World Congress of Cardiology. Washington, D. C. September 12–17.

American Hospital Association. Chicago, Ill. Septembar 13–16.

American Medical Association. Clinical Meeting. Miami, Fla. November 29–December 2.

American Medical Writers' Association. Chicago, Ill. September 24.

American Occupational Therapy Association. Shoreham Hotel, Washington, D. C. October 16–22.

American Society of Planning Officials. Benjamin Franklin Hotel, Philadelphia, Pa. September 26–30.

Arthritis and Rheumatism Foundation. New York, N. Y. October 4.

Association of American Medical Colleges. Bedford Springs, Pa. October 25–27.

Congress of International Association for the Prevention of Blindness. New York, N. Y. September 12–17.

Family Service Association of America (Biennial Meeting). Los Angeles, Calif. September 7–10.

Federation of Sewage and Industrial Wastes Associations. Netherland Plaza Hotel, Cincinnati, Ohio. October 11–14.

International Congress of Cardiology (Second). Washington, D. C. September 12–15.

International Congress of Industrial Medicine. Naples, Italy. September 13–19.

International Poliomyelitis Conference (Third). Rome, Italy. September 6–10.

International Society for the Welfare of Cripples (Sixth World Congress). The Hague, Netherlands. September 13–17.

International Union Against Tuberculosis. Madrid, Spain. September 26–October 2.

National Adult Education Association with the Council of National Organizations of the Adult Education Association of the U. S. Morrison Hotel, Chicago, Ill. November 5–9.

National Association for Mental Health. Hotel Statler, New York, N. Y. October 23–25.

National Association of Housing Officials. Philadelphia, Pa. October 10–14.

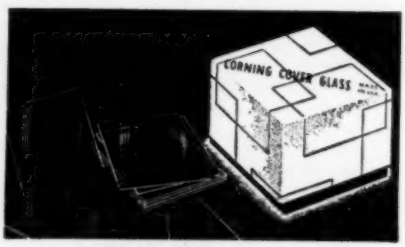
National Recreation Association. St. Louis, Mo. September 27–October 1.

National Rehabilitation Association. Baltimore, Md. October 24–27.

National Safety Council. Conrad Hilton Hotel, Chicago, Ill. October 18–22.

National Society for Crippled Children and Adults. Statler Hotel, Chicago, Ill. November 3–5.

World Medical Association. Rome, Italy. September 26–October 2, 1954.



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October 11–15, 1954

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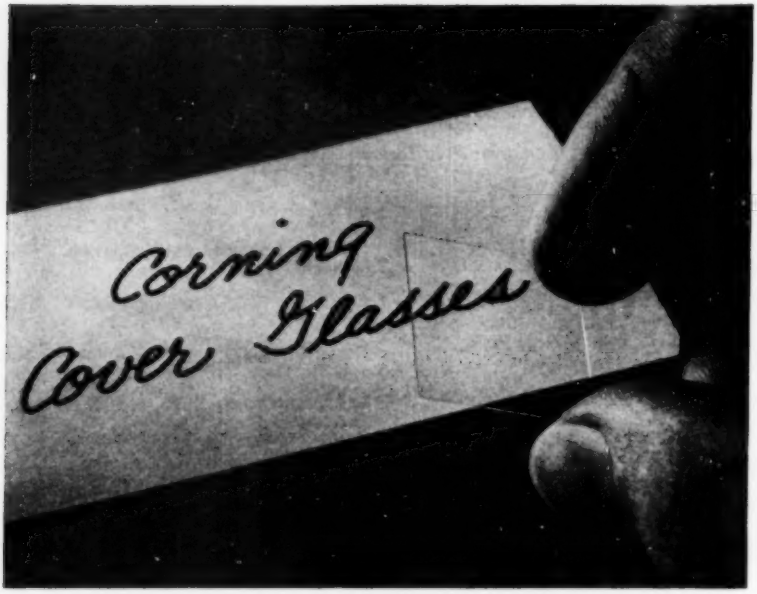

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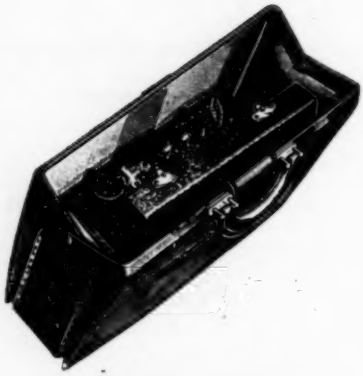

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